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HYDRO

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TO A BRIGHTER
NEW YEAR

VOL. 32-33
1945-1946

JANUARY, 1945

NUMBER 1

ELECTRIC APPLIANCES... *Hard to Get* **BUT EASY TO CARE FOR**



○ Your electric refrigerator, range, iron, toaster, coffee maker and all other electric appliances are time and money savers . . . today they are more valuable than ever. The likelihood of early replacement is slim indeed . . . as long as materials are needed for war purposes. Make your refrigerator last—close refrigerator doors as quickly as possible, defrost regularly, and only use it for perishable goods.

Just a few minutes extra care . . . just a little extra thoughtfulness and they will continue to give you longer efficient service.

repairs are needed see your local electrician.

THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO



THE HYDRO - ELECTRIC POWER COMMISSION OF ONTARIO

PUBLISHED BY THE HYDRO-ELECTRIC
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•
THOMAS H. HOGG, D.ENG., CHAIRMAN.

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COMMISSIONER.

W. ROSS STRIKE, COMMISSIONER.

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M. J. MCHENRY.

•
EDITOR: WILLIAM RATTRAY.
(MEMBER OF CAPPE)

•
SUBSCRIPTION: \$2.00 PER YEAR.

The Front Cover



FROM the roof of the
H.E.P.C. administra-
tion building on University
avenue, J. H. Mackay of
the Commission staff cap-
tured this interesting photo-
graph of Toronto at night.
It seemed to be an appropri-
ate cover with which to
start a year that may herald
a brighter hope for a war-
torn world. Therefore, we
offer it as a toast "To A
Brighter New Year!"

Volume 32

January, 1945

Number 1

CONTENTS

	Page
Morning After! - - - - -	2
Page Three - - - - -	3
Empire Of The North - - - - -	4
Re-Organization Announced - - - - -	7
They Came And Saw - - - - -	8
Purchase Northern Ontario Power Co. - - - - -	11
Santa's Aides - - - - -	14
Harnessing Horsepower - - - - -	16
Stormy Weather - - - - -	20
Hydro Home Forum - - - - -	24
Around The Hydro Circuit - - - - -	25
Monthly Load Summary - - - - -	27
Municipal Loads - - - - -	28



THERE'S PLENTY of tongue-wagging among Toronto's old-timers these days as they try to recall anything quite like the December 12 blizzard which hit Toronto. The illustration on the left shows the entrance to the H.E.P.C. Administration Building on University Avenue the morning after this record storm.

Morning After!

IT WAS no "push-over" for the snow plows the day following the storm. In fact the operators of this plow, shown in action on University Avenue, had such a tough time that they are now allergic to even the opening bars of "White Christmas." This avenue, incidentally, is one of the busiest motorways in Canada — under normal conditions!



ANOTHER YEAR

NEW YEAR'S EVE is traditionally a gay occasion upon which young and old join in a rousing paean of merrymaking as they acclaim the advent of another year. Perhaps it might be regarded as an occasion which is a safety valve for pent-up emotions—one when, for a few fleeting hours, the exacting problems of life fade into the background.

On this, the last night of the year, known in Scotland as Hogmanay, good fellowship abounds. For some, it is a happy event; for others, it may be tinged by sadness as memories of happier days are brought to mind by the ever-familiar strains of "Auld Lang Syne."

For one and all, however, the dawn of a new year is the dawn of new hope. It comes to remind us that we should pause briefly in our onward march through life to take fresh courage and renew our faith in ourselves and our fellow men that we may meet the challenge of the coming days and months, resolutely and unafraid.

As we go forward to this new year, we are conscious of the tremendous tasks which lie ahead on the road to victory. There is a realization that nothing short of complete dedication of our talents to the winning of the war will suffice if we are to be worthy of the men who are dedicating their lives.

Men and women who serve Hydro throughout Ontario can be justly proud of the part Hydro has played, and is playing, on the home front. They will carry on until final victory is achieved. When that day comes, the great resources of Ontario's public ownership enterprise will be marshalled to bring new and still greater benefits to the people of this province and to help build a greater Canada in the years to come.

"IT'S AN ILL WIND"

NATURE'S furious assault upon Southern Ontario on December 12 not only smashed some standing records for snowstorms but it set another kind of a record which cannot be chronicled in statistics.

In blocking traffic arteries and in stopping deliveries of milk and other essential services, the storm was instrumental in unblocking human hearts and in releasing some of the milk of human kindness.

Toronto is still talking about some of the incidents which were witnessed that day—

incidents which are worthy of comment because they serve to show that, deep down, most folk are human, kindly and considerate. It seems, however, that, in many cases, it takes a storm or a catastrophe to really bring man's finer qualities to the top. This fact was revealed in Britain during the blitz of 1940 when Mayfair and the East End in London really became chummy in the air raid shelters.

To come back to the Toronto storm. On that day, folk who ventured forth were buffeted by a lashing wind and whirling snow, but they were cheerful, patient and friendly. There was no grouching, and good deeds were in evidence all over the city, on the streets and in stranded street cars. Because they found that they were comparatively helpless in the face of the storm, folk were drawn closer together.

On the night following the storm, two business girls were riding home on a west bound King car. Both were discussing incidents they had witnessed, and one said to the other: "Did you notice how perfectly human and jolly everybody was yesterday?" "I'll say," was the reply.

The wholehearted emphasis and enthusiasm behind that "I'll say," were more eloquent than the words themselves. That storm really did something to, and for, many folk in Toronto that day.

A NEW CHAPTER

RE-ALLOCATION of the duties of key Commission officials under the new plan of internal organization, which became effective January 1, focuses attention upon Hydro's noteworthy record of achievement—particularly during the past ten years when the business of the Commission doubled.

As a result of this expansion, the duties and responsibilities of Commission personnel have greatly increased. The re-organization is, therefore, designed to re-allocate these duties in such a way as to fully maintain the efficiency of operation which has marked the progress of Hydro since its inception.

This step, in a sense, chronicles the opening of a new and important chapter in the history of the Commission. It means that when Hydro can relinquish the pre-eminent role it is playing in Canada's war production programme, it will be in a position to quickly marshal its full resources for the job of helping build a greater Canada.

EMPIRE of the NORTH



THIS IS the famous Jackfish Curve on the north shore of Lake Superior.

By T. C. JAMES

H.E.P.C. Municipal System Engineer

MAN'S never-ending search for the pot of gold at the end of the rainbow, his efforts to harness the forces of Nature, and the determination of the hardy pioneer, are helping build an industrial empire out of the virgin forest and rock of Ontario's northern hinterland.

The territory covered by this empire lies between the Ottawa river on the east and the Manitoba boundary on the west, a distance of approximately 800 miles, and between the French river on the south and the most northerly point of the inter-provincial boundary on Hudson Bay on the north, approximately 840 miles.

Although sparsely settled at present, it is traversed by a network of railroads and possesses ideal water transportation facilities. Enormous areas of this part of the province are not occupied or settled at all except by Indians, and the wild life of its great forests and streams.

It contains such an abundance of natural resources of standing timber, minerals, and enormous potentialities for water power development, that in the next generation, it is destined to become one of the most important areas of Canada for supplying natural and finished products to the world's markets.

The development of the natural resources of Northern Ontario on an extensive scale is of comparatively recent origin. The international importance of the products of

ONTARIO'S Northern Hinterland has been acclaimed for its vast mineral wealth and timber resources.



T. C. James

Hunters, trappers, holiday makers and fishermen have told about its game, rivers, lakes and big 'uns. There are few people, however, who know this country better than T. C. James, H.E.P.C. municipal system engineer, who has been identified with Hydro for nearly thirty years. His work has been closely linked with the development of Northern Ontario. In this, and in succeeding articles on "Empire Of The North," he unfolds many interesting facts which he has learned at first hand over a long period of years.

industrial activity in that area have been evident only during the past two decades. It required the advent of hydro-electric power to complete the cycle of industrial achievement existing at present.

Although nickel and copper ores were mined to some extent shortly after their discovery in 1883, it required over twenty years of intensive research to establish the real benefits of nickel in the realm of metallurgy. It was not until after the close of the first world war in 1918 that its real value under peace-time conditions became evident and effec-

tive. In fact, it was not until Hydro power from the Abitibi Canyon, development was made available in 1936 that nickel mining, smelting and refining, reached the climax of its present-day industrial importance.

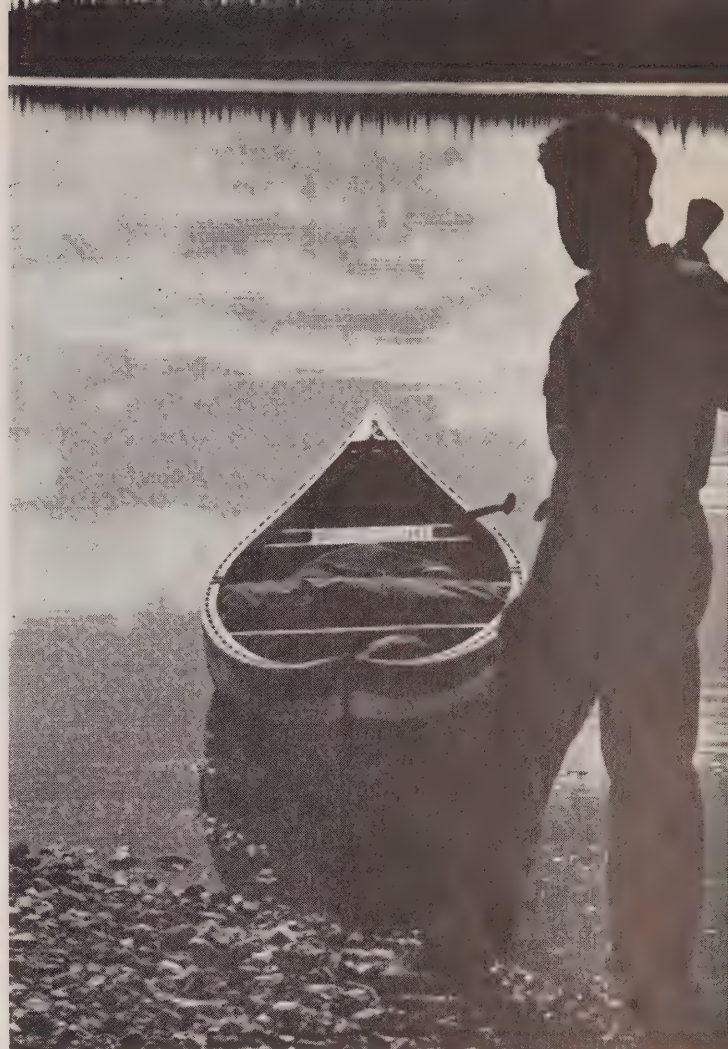
The silver boom in the Cobalt district between 1903 and 1908, was actually the first incident which attracted the attention of captains of industry to the commercial possibilities of Northern Ontario. It was also the first contributing factor in establishing the importance of its great natural resources.

Although a pulp and paper mill was constructed and placed in operation in Sault Ste. Marie in 1896, no real expansion took place in this industry until after 1915. It was not until after 1920, that the enormous timber areas of Northern Ontario attracted capital investment on an extensive scale.

Some gold mines were brought into production after the Timiskaming and Northern Ontario Railway had opened up the territory through which it operates. Opening of the Howey mine in the Patricia district in 1929 and of the Northern Empire property at Beardmore in the Long Lac area in 1933 marked the start of an extensive expansion in gold mining and milling operations. This expansion was speeded by the availability of Hydro power from the Ear Falls development on the English river, the Cameron Falls and Alexander developments on the Nipigon river, and from the Abitibi Canyon plant.

The grain trade at the lakehead, although fairly well started after 1906, when the Kaministiquia Power Company's output was made available at Fort William and Port Arthur, did not reach its present magnitude until after

THIS ILLUSTRATION accentuates another reason why so many interesting stories come out of Ontario's Empire of the North. It shows the Magpie Falls near the village of Michipicoten river, where the big 'uns really bite.



SURVEYORS, HUNTERS and tourists find a canoe very useful in Ontario's North Country which has been acclaimed as a canoist's paradise. This scene, on the Missinaibi river, suggests delightful possibilities.



1920, when Nipigon power was first delivered to the Twin Cities.

It is significant, therefore, that industrial development in Northern Ontario has only reached the stage of great national and international importance during the past twenty-five years. It is also significant that it was not until low-cost electric power was made available that these industries attained their present development and importance.

With the enormous possibilities for future power development it is quite reasonable that this great north country may shortly become one of the world's great industrial centres.

Transportation was the means of first opening up this country to industrial effort, and through the original construction of railways, great mineral deposits were discovered followed by extensive mining operations. Rail transportation was the means by which the products of over 300,000 square miles of timber lands could be delivered to consumers in the world's markets. Industrial effort eventually followed the construction and operation of railway lines. Rail and water transportation were both necessary for the delivery of the western prairie grown grains to the seaboard, and fostered the establishment of great terminal elevators at the point of transfer between rail and water.

Prior to the construction of the Canadian Pacific Railway, and the inauguration of the first trans-continental train service in 1886, Northern Ontario was a vast untravelled wilderness. In these early days, when nature reigned supreme, canoes were the principal means of transport on the inland lakes and streams. Modern methods of transportation were not available until shortly before the close of the last century.

Although some mining operations were carried on in the Sudbury district after the discovery of the nickel and copper ore deposits in 1883, no local beneficial results of this rail transportation service were in evidence in Northern Ontario until at the beginning of the present century when this vast north country began to open up for settlement and industrial activity.



SNOW COMES to endow the far-flung virgin wilderness of Northern Ontario with a beauty such as one finds on a painted Christmas card. This particular winter scene shows deer in Algonquin Park.

Following extensive topographical and geological surveys and a careful investigation of the forest and agricultural resources of the area between North Bay and Kirkland Lake, undertaken by the Ontario Department of Lands and Forests, survey work on the construction of a government colonization railway was commenced in 1901. Legislation establishing the Timiskaming and Northern Ontario Railway Commission was passed in 1902. Construction work began in 1903, and train service as far as New Liskeard was inaugurated in 1905. Branch lines were constructed to the Porcupine Gold Mining Camp, and the Elk Lake district, in 1912, to Iroquois Falls to provide for the freight handling requirements of the Abitibi Company's newsprint mill in 1913, and from Swastika to Larder Lake in 1924. A further extension to Moosonee on James Bay was undertaken in 1922, and completed in 1932. This railway, therefore, within a period of 30 years, opened up the entire territory between the French river and James Bay. Its operations were largely responsible for the industrial development of this area. It has in operation at present some five hundred miles of rail lines giving transportation service to all settlements and industrial locations in the area through which it operates, and provides a connection with all three of the trans-continental rail lines.

The district of Algoma was opened up for settlement by the construction of the Algoma Central Railway in 1901, and its completion to Franz, the junction point with the Canadian Pacific trans-continental line, in 1906. This railway was originally intended to be used in hauling iron ore from the Helen Iron Mine in the Michipicoten area to the smelter and steel mill at Sault Ste. Marie. It has, however, been used extensively as a colonization road and has given excellent results. An extension was completed to Oba connecting with the Canadian Northern Railway's trans-continental line, and to its present terminus at Hearst on the Grand Trunk Pacific trans-continental line, in 1914. The Algoma Central Railway operates approximately three hundred miles of main line between Sault Ste. Marie and Hearst, and twenty-six miles of branch line to Michipicoten.

The second trans-continental rail line to be constructed in Northern Ontario was the Canadian Northern Railway. It first began operation in Manitoba, and in 1898, undertook the construction of an extension to Port Arthur via Rainy river and Fort Frances, which was completed in 1902. An extension of this company's line from Port Arthur to Sudbury was completed in 1914, to make connection with their eastern system which had been completed to the latter point prior to that date. And so, through trans-continental train service began in 1915.

The third trans-continental rail line through Northern Ontario was that of the Grand Trunk Pacific between Quebec and Winnipeg, which was completed and placed into operation in 1915. The route chosen was straight through the most northerly section of the province in a direct line between eastern and western Canadian points. All of the original Canadian Northern and Grand Trunk Pacific lines have now been merged and form a part of the Canadian National Railways system which operates about 2,000 miles of track in Northern Ontario. The combined mileage of all rail systems in Northern Ontario is approximately 4,000 miles.

(Continued on page 27)

RE-ORGANIZATION OF KEY PERSONNEL IS ANNOUNCED BY HYDRO COMMISSION

Commission Departments And Sections Now Under Seven Main Divisions—Three Chief Engineers Are Appointed—Became Effective January 1—New Plan Designed To Meet Rapid Expansion And Increased Responsibilities

RE-ALLOCATION of duties of key personnel of The Hydro-Electric Power Commission of Ontario under a new plan of internal organization, which became effective January 1, channels many departments and sections into seven main groups so that allied operations are co-ordinated.

This announcement has been made by the Commission comprising Dr. Thomas H. Hogg, chairman, Hon. George H. Challies and W. Ross Strike.

The re-orientation, it is pointed out, is designed to meet the increased responsibilities and duties emerging from the rapid expansion of the past decade during which the business of the Commission has doubled.

The major change under the new plan involves the Engineering Department which is now subdivided into three main divisions under three chief engineers as follows: Engineering—Operations, John Dibblee; Engineering—Design and Construction, R. L. Hearn; Engineering—Municipal, R. T. Jeffery.

Osborne Mitchell, the secretary, heads the Executive and Secretarial Division, while the Accounting and Treasury Divisions are under the direction of Alex. McPherson, accountant, and John Walters, treasurer, respectively, and



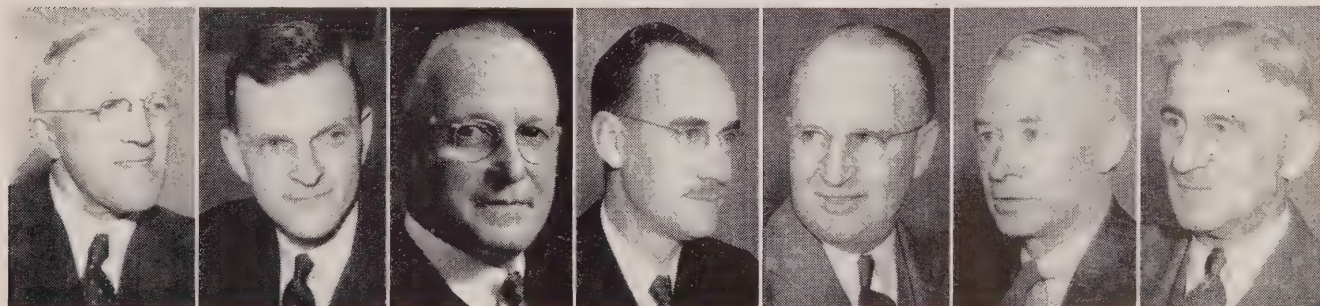
HERE ARE the present members of The Hydro-Electric Power Commission of Ontario. They are, from left to right, Hon. George H. Challies, vice-chairman; Dr. Thomas H. Hogg, chairman; and W. Ross Strike.

the Sales Promotion Division is headed by M. J. McHenry, director of sales promotion.

The Commission's announcement stresses the fact that efficiency of operation has been the keynote of Hydro's progress since its inception, and that the job of providing one of the most essential public services must be carried on at the highest level of efficiency at all times.

"In this rapidly changing world," continues the announcement, "we must be sensitive to new ideas and, by using our best judgment, we must constantly test and improve our methods in order that we can continue to provide a modern service."

In making a move which has the effect of streamlining the various operations and duties of Hydro and its key personnel, the Commission, it is pointed out, is also placing itself in a position in which it will be prepared to meet the demands of the transition and post-war periods.



Alex McPherson
Chief Accountant,
H.E.P.C.

John Walters
Treasurer,
H.E.P.C.

R. T. Jeffery
Chief Engineer,
Municipal.

Osborne Mitchell
Secretary,
H.E.P.C.

John Dibblee
Chief Engineer,
Operations.

R. L. Hearn
Chief Engineer,
Design-Const.

M. J. McHenry
Director,
Sales Promotion.

They Came

AND SAW...



OPEN house was the order of the day at the H.E.P.C. laboratories on Strachan Avenue, on December 7, (Pearl Harbor) when the discussion group of the Toronto Section of the American Institute of Electrical Engineers came and saw something of the work which is being done in each of the thirteen sections of the lab.

They saw the many types of electric apparatus and precision instruments used in making tests on vital war materials; how these tests can pre-determine the efficiency of certain equipment installed in submarines, ships, planes and military vehicles.

Accuracy to the "nth" degree is the fundamental principle which has been associated with precision tests conducted at the lab. since its inception in 1912. It is equipped for a wide variety of structural, electrical, and chemical tests, as well as for approval testing of electrical appliances, all of which, were demonstrated to the interested gathering in attendance.

Following dinner in the employee-operated cafeteria, the group was divided into four parties. Each group visited the thirteen sections in turn, and a demonstration of the work in each section was given by the demonstrator in charge, who also pointed out the various types of instruments and tests made in his particular section and gave a brief outline of the work which is being done.

Demonstrations were given by the following members of the laboratory staff: chemistry, T. H. Chisholm; electrical measurements, G. B. Tebo, and J. W. Speight; photometric, H. F. Davidson, and A. G. Plumpton; X-ray, Dan Watt; insulated wire, J. R. Catterall, and D. Wane; meter test, G. Potter; approvals, C. Lowman, and W. Jaques; oil and glove test, T. R. Lang; high voltage test, G. W. N. Fitzgerald; concrete, W. Schnarr; structural, E. J. Mason; meter operating, A. R. Wells, and C. K. Duff who "filled in" as a demonstrator.



OFFERS SOMETHING CONCRETE!

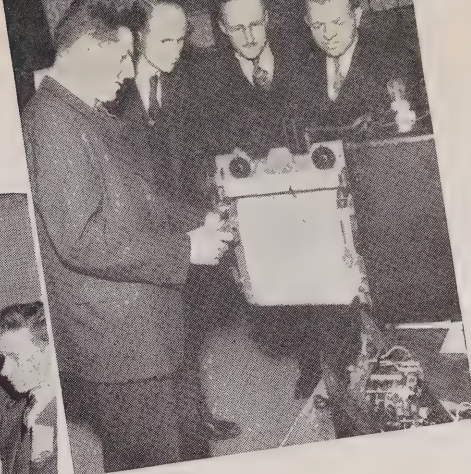
The operation of a Lancaster Mixer is explained to an interested group of visitors by W. Schnarr. This equipment, especially designed for laboratory investigation of concrete mixtures, differs considerably from the conventional type of mixer employed on concrete construction projects.

MEASURES LIGHT

Light given out by any type of lighting equipment can be measured by the photometer which Arthur Plumpton is describing to one of the groups visiting the photometric lab.

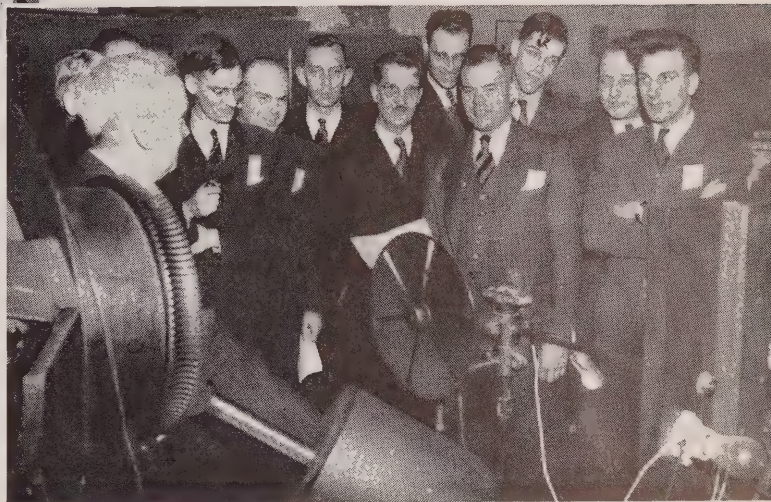
CONCRETE CORE

E. J. Mason, foreman of the structural materials laboratory, demonstrates special apparatus for determining the transverse strength of concrete. The specimen shown here is a 6-inch diameter core removed by diamond drill from a concrete dam in Northern Ontario.



DON'T WRITE—TELEGRAPH!

Remote telemetering devices to be installed in the power supervisors' office, to record the output of the Queenston generating station, are examined at the lab. Information formerly transmitted by mail will now be recorded simultaneously at Queenston and head office.





RADIANT ENERGY

The rapid temperature rise in a steel panel obtained by radiant heating in an infra-red oven is demonstrated by Hedley Davidson. During the past few years many tests and recommendations on the use of this type of energy for industrial heating operations have been made by the H.E.P.C. laboratories.

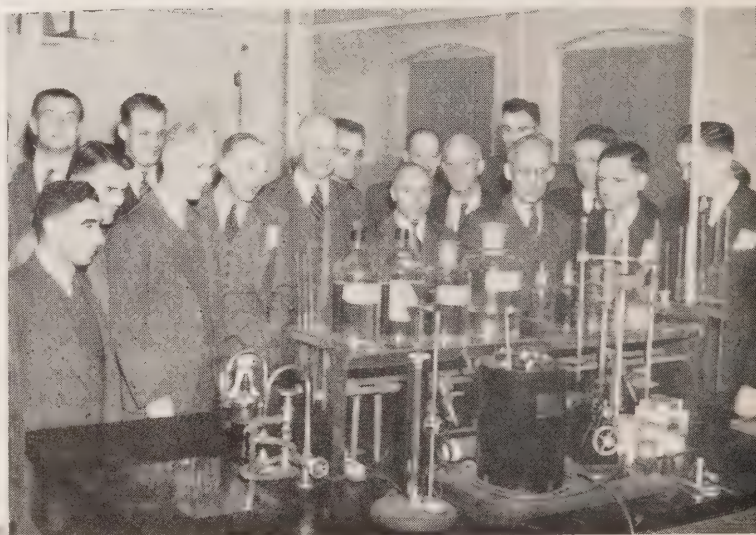


JUST SO LONG!

The length of the incision necessary to remove an appendix is indicated by C. Lowman of the approvals section, as he explains how the high frequency electro-surgical instrument aids the surgeon. The use of this electrical knife, it is claimed, lessens bleeding and surgical shock, and by reducing the size of the incision helps the patient recuperate more quickly.

FIRE AND BRIMSTONE!

Equipment used to determine the B.T.U., and sulphur content of coal, is shown by T. H. Chisholm, head of the chemical section, who explained some of the many tests conducted in the chemical lab.



MAINTAIN HIGH STANDARD

Laboratory type long-scale indicating instruments are being discussed by G. B. Tebo, supervising engineer, who points out that these play an important part in maintaining a high standard of accuracy in electrical measurements throughout the province.

ADVANTAGES OF HYDRO SERVICE EXTENDED WITH PURCHASE OF NORTHERN PROPERTIES

Commission Acquires Northern Ontario Power Company For \$12,500,000—Eight Hydro-Electric Plants With Installed Capacity of 66,840 Horsepower—Substantial Economies and Improvement in Service Predicted.



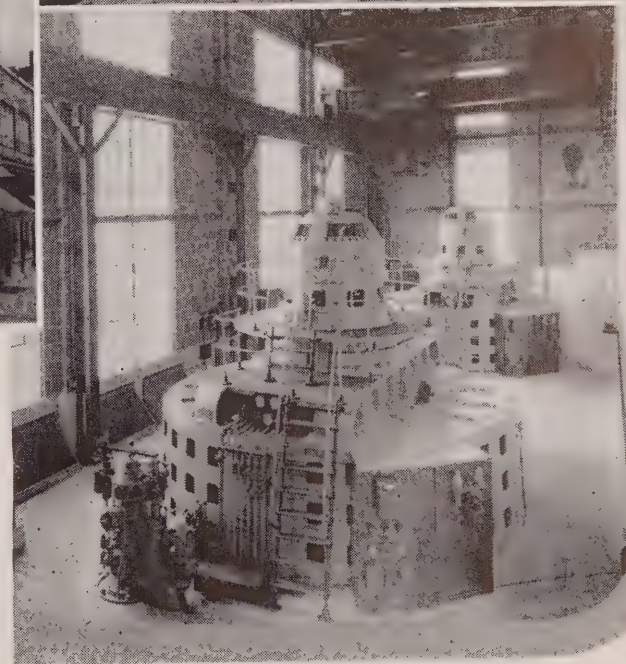
HEAD OFFICES (above) of the recently purchased Northern Ontario Power Company are located in New Liskeard.

SUBSTANTIAL economies in operation and maintenance, along with an improvement in service to the consumers affected, are advantages emphasized in the announcement of the purchase of the properties and physical assets of the Northern Ontario Power Company for \$12,500,000 by The Hydro-Electric Commission of Ontario for the Province of Ontario.

The Commission, which for many years has been operating Northern Ontario Properties in trust for the Province, will integrate the company's system with its Abitibi system.

Official announcement of the purchase was made by Prime Minister George A. Drew on December 19, when he stated that the price was equitable and fair to all concerned.

Properties acquired as a result of the purchase which was approved by Cabinet Council at Queen's Park, include eight hydro-electric plants, 739 miles of transmission lines, 157 miles of distribution lines and 421 miles of telephone lines.



ABOVE IS a view of the Upper Notch generating station on the Montreal River. Operating at a head of 48 feet the station has a rated capacity of 13,000 kv-a. Below is an interior view of this station showing its two generators.

The eight plants have an installed capacity of 66,840 horsepower, 26,040 horsepower being generated at 60 cycles, and the remaining capacity at 25 cycles.

The Northern Ontario Power Company had been serving consumers in Cobalt, Haileybury, New Liskeard, Engle-

hart, Timmins, Thornloe and a number of townships, while it had been supplying power also to mining properties in the Porcupine, South Porcupine, Cobalt and Kirkland Lake districts. The territory covered is west of the Quebec boundary and embraces an area which is approximately 100 miles from east to west, while the northern and southern boundaries are Timmins and Cobalt respectively.

While the amalgamation will eliminate considerable duplication of service and benefit the consumers concerned, it is also pointed out that the Commission will now be in a position to extend Hydro service to many rural consumers in the area. Under former conditions of operation this had not been practical, it was explained. For some years, the Commission had been selling power wholesale to the Northern Ontario Power Company and, at the same time, supplying adjacent mining territory with service.

While the purchase became effective as of November 30, 1944, Dr. Thomas H. Hogg, chairman of The Hydro Electric Power Commission of Ontario, explained that the Commission will not take over the actual operation until February 1, and that all accounts for the intervening period

would be adjusted. He also announced that the purchase price of \$12,500,000 would be paid in two bond issues, both dated January 1, 1945. One will be a \$5,000,000 issue of five-year bonds bearing interest at 2 per cent, and the other

THE MAIN dam at the Indian Chutes generating station, below, is 320 feet long with a maximum height of 400 feet. The powerhouse is of reinforced concrete construction, and is 118 feet long and 40 feet wide. Two wooden stave pipes 9 feet in diameter conduct the water from the dam to the turbines.

BELOW IS a view of the Fountain Falls generating station located on the Montreal river. The dam and powerhouse are of concrete construction and were completed in 1914.



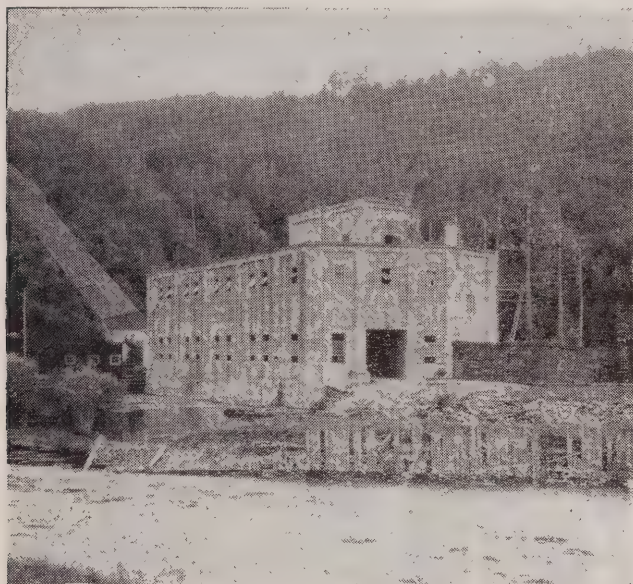
SANDY FALLS generating station, shown below, is located about seven miles below Timmins on the Mattagami river, and operates on an average head of 32 feet.



a \$7,500,000 issue of fifteen-year bonds bearing interest at 3 per cent and callable at any time after 1945.

The Hydro chairman also stated that new contracts would be negotiated with the mines which had been receiving power from the Northern Ontario Power Company at \$36 a horsepower. The Hydro rate of \$27.50 per horsepower will become effective as soon as the new contracts take effect, Dr. Hogg said. At the same time, he indicated that no immediate changes are contemplated in domestic rates and that there would be no staff changes at the plants which have been acquired by the Commission.

These plants and their capacities are: Wawaitin Falls on the Mattagami river (14,900 horsepower); Sandy Falls on the Mattagami river (4,900 horsepower); Lower Sturgeon Falls on the Sturgeon river (8,000 horsepower); Matabitchuan plant on the Matabitchuan river (13,200 horsepower); and the following plants on the Montreal river: Hound Chutes (5,340 horsepower); Fountain Falls (3,000 horsepower); Indian Chutes (4,500 horsepower); and Upper Notch (13,000 horsepower).



THE MATABITCHUAN generating station is situated on the Matabitchuan river at the outlet of Bass lake where the water was diverted from the natural course of the river by the main dam. The average operating head at which the plant operates is 312 feet.

The present capitalization of the province's Northern Ontario Properties, which have been operated for many years by the Commission in trust for the Ontario Government, is between \$41,000,000 and \$42,000,000. The latest purchase increases this amount to approximately \$54,000,000.

The Northern Ontario Power Company is a subsidiary of Canada Northern Power Company Ltd., which also owns the Quebec Northern Power Company Ltd.

To take care of growth load the Canada Northern Power Corporation entered into a contract with the Commission in 1934, and by 1941 Hydro was supplying 56,200 horsepower to the corporation whose total load at that time was 141,800 horsepower.

Latterly, however, Hydro was supplying only 3,083 horsepower. This was due to the wartime decrease in min-



THE HOUND Chutes station is located on the Montreal river about six miles from Cobalt. A canal about 1,400 feet long carries the water from the main dam to the turbines which operate under an average head of 32 feet.

ing operations and also to the fact that the Commission had taken over the power supply to the Lake Shore and Hollinger mining companies. The combined pre-war load of these companies was 25,000 horsepower, and the present load is approximately 18,000 horsepower.



STURGEON FALLS, MATTAGAMI RIVER



WAWAITIN FALLS, MATTAGAMI RIVER

LOWER STURGEON Falls generating station, above, is located on the Mattagami river 23 miles below the Sandy Falls development. The lower photograph is a view of the Wawaitin Falls generating station located on the same river about 16 miles above Timmins.



WHEN Hydro girls put their heads together, things are bound to happen. This time the result was a Christmas party, staged at Christie Street Hospital in Toronto, on December 21, under the auspices of the Ontario Hydro Girls' Club.

Members of the club arranged two parties, one in the roof ward and the other in the north annex. The evening's entertainment included installing and decorating Christmas

trees, a sing-song and the distribution of parcels to patients who were entertained by the girls. Later refreshments were served.

The Ontario Hydro Girls' Club, which has a membership of approximately 100, was inaugurated a few weeks ago for the purpose of visiting the patients in two wards at Christie Street Military Hospital once a week.

CLUB MEMBERS (top picture) giving out with Christmas carols for Harold Noseworthy in the roof ward at Christie street hospital are, left to right, Georgina Eden, Norma Stevenson and Genevieve Kelly. In the lower illustration, Hubert Guay seems to be getting considerable attention from Louise Webster, Rose Marie Daly, Beatrice Clarke, Doris Williamson, Audrey Callan, Rita Gouin, Alice Blackburn, Kay Stockwell, Carmela Mele and Iona Samis.



Club members have agreed to go to the roof ward on Thursday evenings, where there are 27 bed patients, and either play cribbage with the boys, or just have friendly chats.

Friday evenings are devoted to the patients in the north annex where there are approximately 60 boys and about 25 girls. As some of these patients are able to get out of bed, several bridge games get underway, and a portable phonograph provides soft music.

During these weekly visits, refreshments are served and the unanimous opinion seems to be that everybody is happy.

The committee in charge are: Isobel Wilson, Margaret Scales, Olive Lowe, Doris Williamson, Beatrice Clarke, Gladys Davis, and Mrs. Kay Stockwell.



RITA GOUIN (top right) was "elected" to put the packages on the tree in the roof ward. Her aides are: Audrey Callan, Alice Blackburn, Louise Webster, Carmela Mele and Iona Samis.



THE PHOTOGRAPHER caught this group in the north annex just starting to decorate the tree. Some of the patients and P. T. Seibert, past president of the Ontario Hydro-Electric Club, can be seen helping Ann Sheldon, Marie Gallagher, Margaret Scales, Eleanor MacDonald and Jean Hallworth.



THE TWO patients in this illustration appear to be progressing favourably. On the left is Dick May with Alice Blackburn and Flossie Schell, and on the right is Fred Riddell, who is being entertained by Marion Rice and Genevieve Kelly.



MANY HANDS make light work, and Dorothy Newham, Elizabeth Grader, Gladys Davis, Winnifred Wallace, Isobel Wilson and Joy Creyk, with the help of some of the patients, finished the job in no time flat.

HARNESSING HORSEPOWER

POWER PLANNING

By E. M. WOOD

Planning Engineer,

Electrical Engineering Dept., H.E.P.C.

STUDIES, so detailed that the average layman may find them difficult to understand, have to be completed to assure the best choice of available power sites. In this article, therefore, attention is directed to the very important part which engineers of the planning section of the electrical engineering department are called upon to play, and to their close co-operation with other departments.

These engineers are charged with the duty of preparing flexible, long-term plans for the overall development of the power system, into which the year-by-year requirements for new construction can be fitted in an orderly and economical manner.



E. M. WOOD

They have at their finger tips accurate and up-to-date information about their power system in the form of maps, diagrams, indices, tables and charts, showing the locations and capacities of all generators, transformers and lines, not omitting the special limitations of any item.

Records of the size and location of the various power loads, their characteristic variations and the history of their growth, made available by the statistics section of the oper-

THIS is the fourth in a series of articles which outline step-by-step, the work involved in the building of a power plant from the time a site is selected until the electricity is available in homes and factories that may be located hundreds of miles away.—The Editor.

ating department, include the record of peak loads both for the system as a whole and for the various geographic areas which form natural units from the point of view of power supply. These records, therefore, govern the requirements for transmission lines. Figure 1, accompanying this article, shows typical daily load curves of a system or an area for the key load months in a peace-time year. A glance at the curve for December makes further definition of "peak" load unnecessary. The power is expressed in horsepower or more likely in the unit used by electrical engineers, namely, kilowatts. (One kilowatt is approximately $1\frac{1}{3}$ horsepower.) The peak load governs the total power rating of the water turbines and generators which must be installed, and the number and size of the transmission lines required.

Kilovars and Kilowatts

The planning engineer is also vitally interested in what is known as the reactive component of power. This component flows with the power in power system circuits and is measured in "kilovars" to distinguish it from the power which is measured in "kilowatts" or horsepower. The concept of reactive power presents difficulties to many laymen; their experience with it as power users arises in connection with their bills when they pay penalty for low power factor, which means that they have taken too many "kilovars" in proportion to the kilowatts in their load. The full explanation is highly technical; however, it may be sufficient to



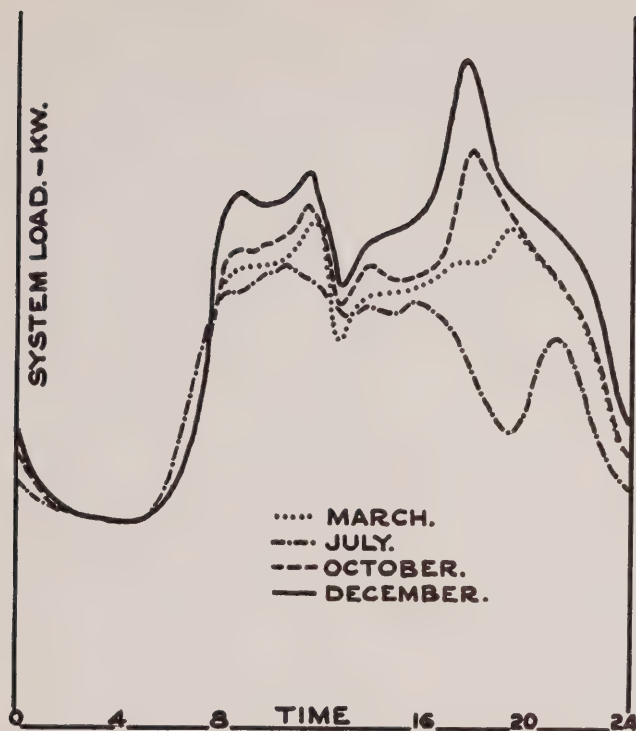


FIG. 1. THESE ARE typical daily load curves, showing how the load demand varies over a 24-hour period for each of the four seasons of the year.

say that kilovars are consumed when current flows in most electric circuits, and especially where there are iron cores as in transformers and motors. Suitable means to provide and transmit them is as necessary as those for generating and transmitting the "kilowatts" of power. If they are not

adequately provided for there will be plenty of trouble, chiefly by way of low voltage.

The system requirement of energy (kilowatt hours), measured by meters similar to the familiar house watt-hour meter and totalized over the system daily and monthly, is directly related to the amount of water which must flow through the water-turbines in corresponding periods and is, therefore, essential data.

Another class of data required has to do with continuity of service and the effect of such transient disturbances as flash-over on lines and equipment. A continuous record is kept of the occurrence and location of such faults and the consequent behaviour of the system. This information is based on the observation of operators and records from oscillographs which are started by the disturbances and which automatically record the behaviour of the various parts of the system. From these sources, a pool of data is built up which is of great value to the planning engineer in specifying the characteristics of lines, switching, generators and other equipment required to assure a continuity of power supply.

Make Accurate Studies

With all this information, which is the "raw material" of planning, the engineers are ready to consider when and where new power developments are required. It may be assumed that they will have made long-range studies from time to time to form an appreciation of what the system should look like at least ten years ahead. Such preliminary studies would be based on a load estimate derived from such a chart as Fig. 2, which shows the yearly peak loads on a large power system for some twenty years. It will be noted that although there is a "depression" and also a "boom" in this period, the general slope of the graph is quite constant. An estimate extending the growth curve as shown would

COMPRISING A series of panelled sections, each of which is seven feet high and two in depth, the Network Calculator, shown on the previous page, is located in the Commission's Administration Building. On the Calculator board (right) the operator by pressing the proper combination of keys can link the metering equipment with any circuit in which electrical quantities are to be measured.



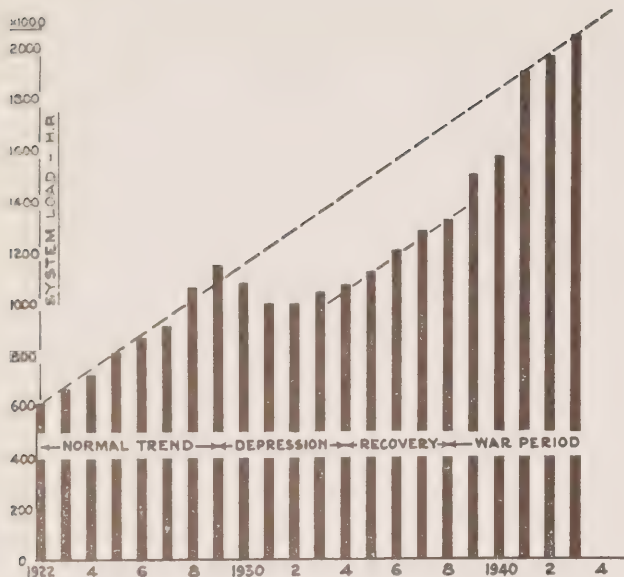


FIG. 2. THIS CHART shows the maximum December load demand from 1922 to date. Note the "depression" (1930-35), and how the load increased in the "recovery" period at the same rate as before. The outbreak of war and restrictions on the use of power have influenced the load demand from 1939.

be sufficiently close for preliminary studies in fitting in the various power sites and indicating roughly when a new power development will be required.

However, before a new power development, costing millions of dollars, can be authorized much more accurate studies will be required. The first need will be an estimate of load growth with an attempt at a greater degree of accuracy for at least the period during which existing power sources are being exhausted and until the proposed new source will have been wholly consumed in load growth. As a matter of routine, estimates of load growth are made year by year and a careful record is kept to show the effect of various trends and factors on the growth. By careful analysis, it is possible to detect changes in trend so that estimates can be made a year in advance with high accuracy, and for three or four years in normal times with sufficient accuracy.

The load estimates are discussed in an interdepartmental "Load and Capacity Committee" comprising senior department engineers. The planning engineers submit the results of their analyses of load trends. The operating engineers present their data on certain loads. Information is presented by the municipal engineers who are in constant touch with the managers of the co-operating municipal

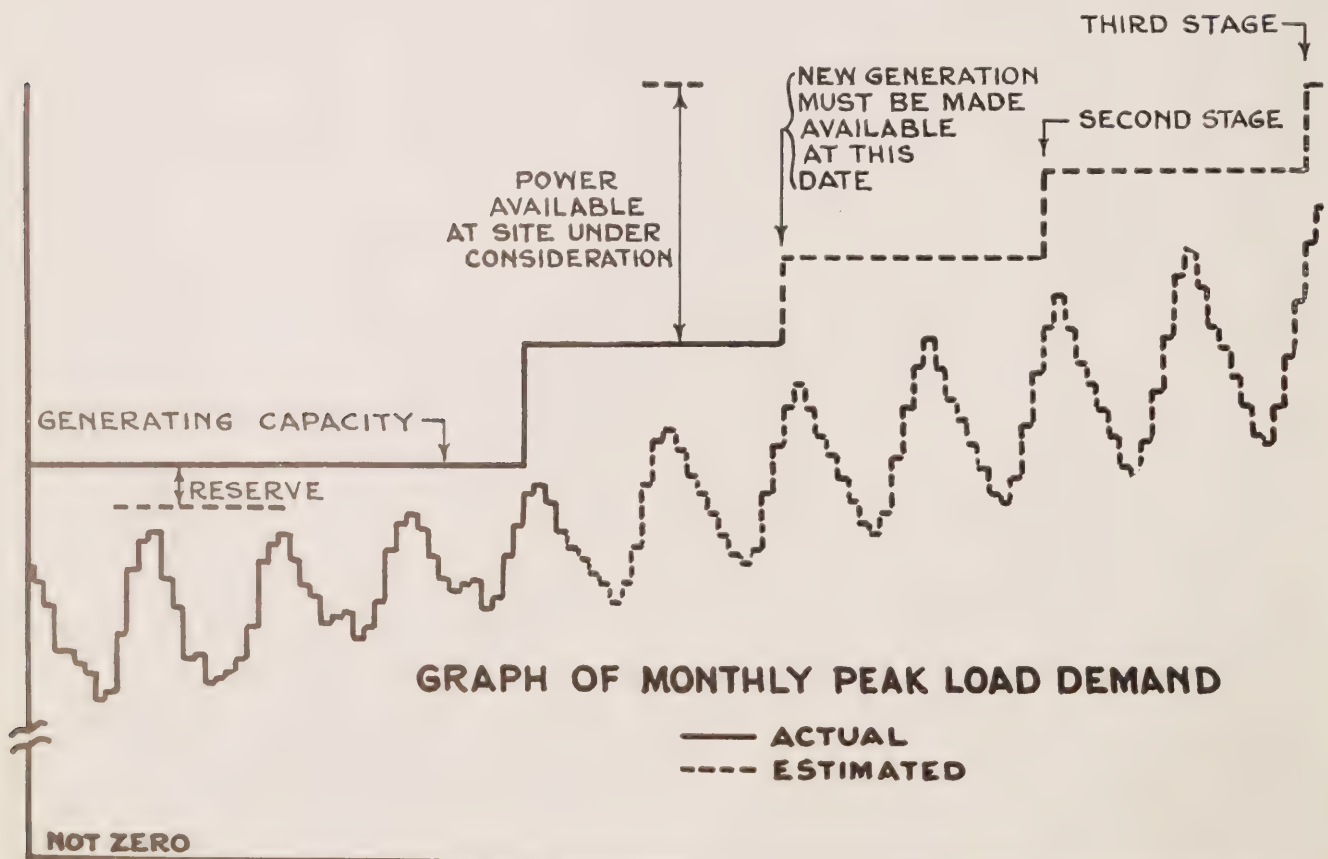


FIG. 3. SHOWN IN this graph is the estimated monthly peak load demand. It also indicates when additional power is required in order to supply the load and maintain adequate reserve on the system. The graph of generating capacity is for the development of one particular site which, in this illustration, is assumed to be developed in three stages at intervals of two years.

systems and who are likely to be the first to hear of the trends of business in the various localities and the size and location of prospective new loads. The sales promotion representative brings to the discussion a knowledge of the prospects for new uses for electrical energy. From all this data the committee agrees upon an estimate of the requirements of power and energy, month by month over the period under consideration.

At the same time the hydraulic department presents their information with respect to the peak capacity and dependable energy capacity (which corresponds to the water flow and conditions of storage) of existing plants over the same period.

The estimates of load are then compared month by month with the existing resources, taking into account suitable reserves of generation (in excess of the load) which should be available to take care of emergencies. The results are incorporated in a chart, as in Fig. 3, which indicates the estimated peak surplus or deficit in the immediate future years under consideration. Such a chart, after receiving formal approval of the Committee, becomes the official basis for further study.

From a chart of this type it is possible to forecast the date for commencing the construction of a new development, taking into account the time required for construction. It may also provide a basis for decision whether the new development should be a "base load" plant wherein the generation installed is sufficient only to use the dependable flow of the stream or whether the site should be "over-developed" to carry peak loads by installing more generators. Additional units can be installed in many water-power plants at relatively low cost.

Compare Respective Sites

Assuming that there are several possible sites, one of which is to be selected for development, the next step is to try to fit each of the alternative developments into the system by comparing its peak power and energy possibilities, as determined by the hydraulic department, with the load requirements of the system, and by determining what transmission lines and other facilities would be required to connect the new power plant into the system to assure satisfactory operating results.

In studying this latter aspect, the engineers use the "Network Calculator,"* located on the seventh floor of the Administration Building. On this apparatus, engineers can set up a miniature replica of the system, with representation to scale of the electrical characteristics of all generators, transformer banks, voltage regulators, transmission lines and loads, so that the loading of the various units of equipment, the lines and the voltage conditions at the various points, may be observed. By this means, the effect of alternative additions of generators and transmission lines can be tried out in a short time with the confidence that if the system is constructed with the characteristics used on the Calculator the operating results will correspond.

The system is first set up with existing facilities and for estimated loads corresponding to the year just before the new power is brought in. These conditions are then noted. The next step is to increase the area loads on the calculator in accordance with the official estimate to a value which will absorb all the power available in the proposed plant under investigation.

The new power source is then added to the system on the calculator and a study of the power flows indicates the area with greatest deficiency of power to which the new power source should be most directly connected. By this means the necessary transmission lines to connect the new power site and to reinforce the system internally for the heavier loads are also indicated.

Hold Frequent Discussions

In this way, the alternative power sites are studied for widely differing conditions of load, as for example estimated loads for various hours of the day of different months of the year such as July and December. Further studies indicate the value of short circuit current and the effect of these short circuits on the system. This information has a bearing on the transmission line requirements and the specification of the switching equipment.

During all these studies there are frequent discussions with the hydraulic engineers to ensure the best matching of the electrical and hydraulic characteristics, and with the operating engineers on operating problems.

Finally, a system or alternative systems are agreed upon, and specifications are prepared, based on the results of the many-sided studies. These specifications are then sent to the design sections for estimates on cost of construction, which will be consolidated with those of the hydraulic department for the respective sites. In this way, it is possible to determine the total cost of the development.

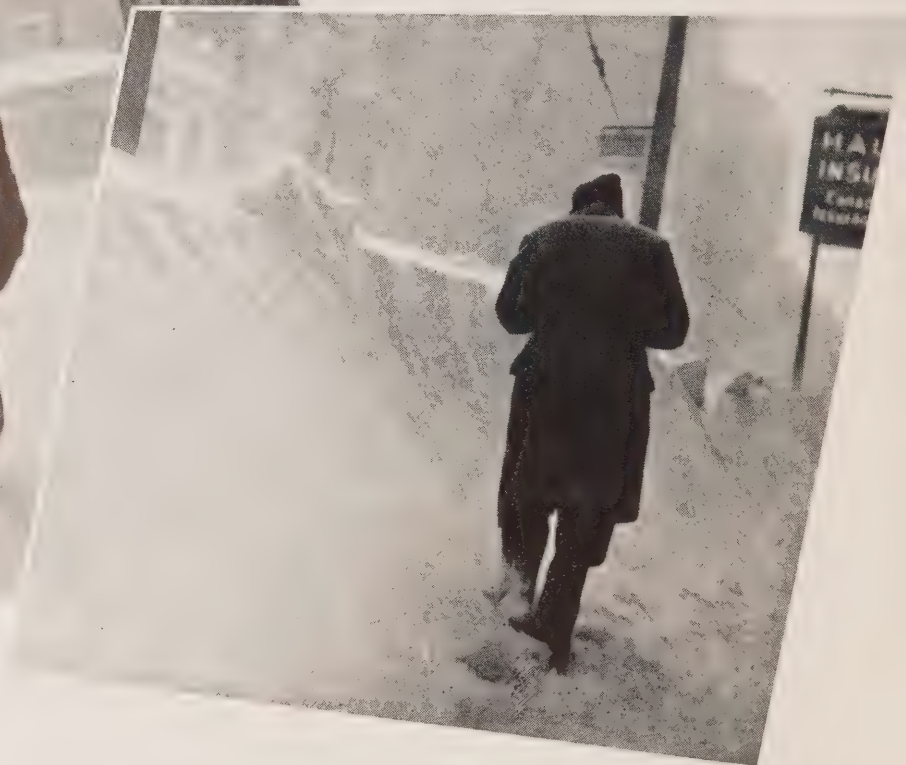
These estimates provide data for a comparison of the respective schemes of development from an economic standpoint, and for a report on the capital costs, the cumulative cost, including carrying charges to a common date, the transmission losses, as determined on the Network Calculator, and the respective additions to the power resources of the system.

This information is then submitted to the cost accounting section of the municipal department, where the effect of each alternative development on cost of power to the consumer is calculated. If the development is very large, so that it will take care of estimated growth for several years, it is probable that the study of the effect on power costs will be made not only on the official estimate of growth but also on various slower rates of growth to see if such slower rate would make the cost of the proposed development unduly burdensome.

A joint report is then prepared by the hydraulic and electrical engineers, showing a comparison of suitable developments. Following further discussions, a request is made to the Commission for authorization of the development of the preferred site, after which the project is ready for detailed design and construction.

*Described in the June, 1942, issue of *Hydro News*.

STORMY WEATHER



ONLY a few made it, but Hydro carried on! Through waist-deep snow and a blinding blizzard, which smashed one record and has not been equalled in 72 years, residents of Southern Ontario struggled to work on December 12.

While transportation systems laboured along hours behind schedule, department stores closed, and officers suspended business for the day, an uninterrupted flow of Hydro power kept war industry humming as night shifts carried on into the day. Hotels were crowded to capacity as travellers, considering themselves storm-bound, failed to vacate their rooms, and executives and office workers from outlying suburbs, who had struggled through the morning storm, found it almost impossible to return home and sought accommodation in hotels.

Actually, according to officials at the Dominion Meteorological office in Toronto, there were two storms, one following closely on the heels of the other. During the first storm on Monday, 2.7 inches of snow fell, and in the second, which

commenced on Monday night and continued until Tuesday night, 19.8 inches of snow was deposited on streets and highways. Lashed by a strong wind, it quickly piled into drifts which completely tied up transportation facilities.

Data compiled by the Meteorological Service of Canada reveals that while the record of 22.5 inches of snow, which fell on Monday and Tuesday, was bettered by half an inch by a storm occurring on December 25 and 26, 1872, the record snowfall in 24 hours, made on March 27 and 28, 1876, of 16.2 inches was beaten by 3.6 inches.

Toronto Was Storm Centre

The storm struck Southern Ontario a little west of London, while its northern boundary lay somewhere between Orillia and Owen Sound. The path of the storm then swung south, missing Ottawa, touching Cornwall and then swung on down through New York State.

Toronto was the storm's centre, and when Tuesday morning dawned milk deliveries, bread deliveries, fire



IT TOOK many hours of tough work with a bulldozer to find the driveway at the rear of the H.E.P.C. administration building on University Avenue, after the snow storm. Note the sign which is well and truly parked in the snow.



FOR THESE two kiddies it was fun to see the Commission's efficient maintenance staff clear a path through the deep snow on Murray Street along the front of the parking area.



IF THE wave of a magic wand could transform snow into gold Toronto would have been a city of fabulous wealth following the December 12 snow storm. For instance, here's a small fortune at Dundas and Bay Streets.

equipment, and motor traffic was at a standstill. Street car lines, with the exception of two, were kept open by almost superhuman efforts on the part of the Toronto Transportation Commission's employees. The entire snow fighting equipment of the railway was pressed into service, and snow shovellers, summoned by radio, seconded the work of maintenance crews, who worked long hours, as did the operators of cars whose crews could not be relieved.

Heavy motorized equipment of the Toronto Hydro-Electric System was storm bound from Tuesday morning until Wednesday night, but in spite of difficulties all trouble calls received attention, although the time required to get the crews on the actual job was considerably longer than average. Consumer call men used the street cars entirely, and all consumers whose house lighting gave trouble were given attention without serious delay.

The street lighting patrol kept four cars on the road keeping to streets which had been partially cleared. Note was made of lights which were not working and burned out lamps were replaced during the day.

Linemen, standing by in case of serious trouble on the lines, were used to clear Hydro properties of snow and to make it possible to get heavy equipment in and out. Maintenance men, manning Hydro trucks, were equipped with shovels and, whenever it was necessary to have a truck standing on the street, the men shovelled out a place in which the truck could stand without blocking traffic and

IF IT were necessary to remind anyone in Toronto that it snowed on December 12, these two photographs should offer convincing proof. On the right is an impression of the "winter road" at the back of the H.E.P.C. Administration Building. The photograph below shows what Queen and Bay Streets looked like the day following the storm.

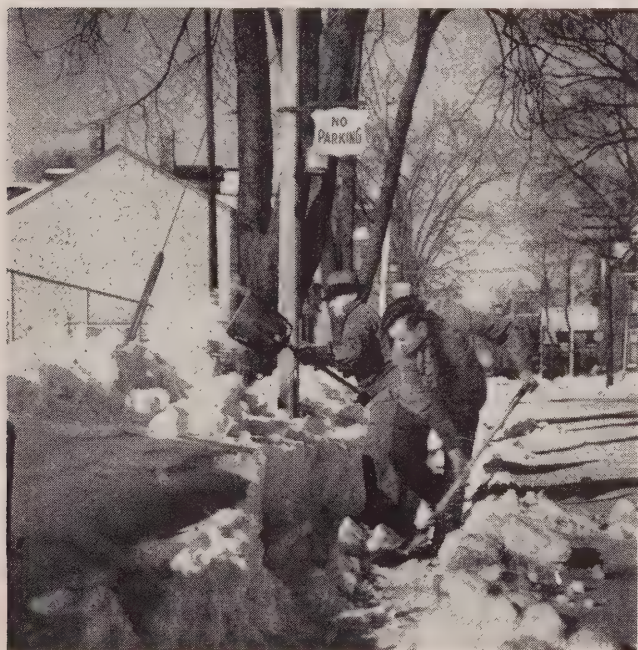


adding further to the difficulties the public experienced in getting to office and factory for three days following the storm.

Had the storm caused excessive trouble on Hydro lines, the Toronto Hydro's network system could have "taken it," according to C. E. Schwenger, distribution engineer. "This system is so designed," he explained, "that in the event of a transformer giving out it can be cut free, without service interruption, and left until conditions are back to normal, and maintenance men are able to replace it."

Hydro's rural lines suffered little from the storm. Rural extensions, which are usually carried on until the middle of December, were halted until spring. The Cobourg line gang, after battling deep drifts most of Tuesday morning, were held up in Grafton until after the snow-plow went through. On nearing Cobourg they found a tree had blown across the line affecting a small section. After obtaining the necessary equipment the crew returned and worked until late at night to restore service.

Another superintendent in an adjoining district took his crew five miles across country by sleigh to replace a transformer which had blown out and cut power to two farms.



"SHOULDER SHOVELS" was the general order issued to the Commission maintenance staff the day following the snow blitz.

Hydro News got this action shot on Murray Street.

Miss Isabel C. Bauldry, chief operator of the switchboard in the H.E.P.C. administration building, Toronto, walked from Brock Avenue and College Street to the office and, after manning the board for several hours, walked home again when street car service on the Carlton line was suspended for several hours.

When B. O. Salter, H.E.P.C. purchasing agent, who was stranded at his home, phoned the Hydro switchboard, he was surprised to discover that his call had been answered, not by a switchboard girl, but by R. T. Jeffery, chief municipal engineer. Commenting on his reaction, Mr. Salter



TO OPEN the gate of the parking area was easier said than done. It took several hours of hard digging to reach the half way mark, as shown above. "The place's snow what it used to be," chuckled a Scot as he ducked a snowball.

remarked: "I was certainly surprised to hear the courteous voice of one of our high officials. When I asked him how he had got down, Mr. Jeffery laughingly answered: "I got down all right but I had to plow through about half a mile of snow."

Even the newspapers found that the storm was too much for them, and Toronto evening papers published only one edition, while for the first time in the 100 year's history of The Globe, a paper was not published due to weather conditions, the Editor-in-Chief of The Globe and Mail told Hydro News.

LONDON'S UNDERGROUND



AFTER five years of living under blackout conditions, the people of the British Isles are likely to be more light-conscious than the people on this continent. An indication of the modern trend in lighting in the Mother Country is shown in the above picture of a London underground railway car. This experimental coach is equipped with twelve tubes of light along each side of the roof over the passengers' heads. The effect is to give practically continuous bands of light. Each tube is two feet long.



Hydro

HOME FORUM

by *Edithemma Muir*

HOME ECONOMIST

IT'S all over for another year! Now that Christmas has come and gone, and now that we have given the New Year a rousing welcome, we must try and settle down to some hard work again. It's not easy, for we're still thinking about such things as beautifully wrapped gifts, decorated trees, turkey and cranberry sauce.

Yes, we're still in low gear so far as work is concerned. We'll soon get into "high," however, for this is going to be a year in which we'll have to give everything we've got. There's a war to be won, and the homemakers have a mighty important part to play in helping win it.

To change the subject, how do you like the new heading for this column? That's the kind of an electric kitchen that makes a house a home. Many fortunate homemakers already have such kitchens, but for many others it's still a post-war dream. Make no mistake about it, however, many women are going to have just that kind of workshop after the war, for I know hundreds who are investing their money in Victory Bonds just for that purpose.

And that prompts me to offer one sound New Year resolution: make your dreams come true, hang on to those bonds and war savings certificates.

We've got a number of other resolutions lined up—leftovers from last year! One is to try and give our readers what they want in this column. Many have urged us to give more hints. Well, here goes!

Left-over chicken goes a long way if it's scalloped with macaroni. Before serving, sprinkle with finely chopped parsley.

Vinegar left in pickle bottles can be used as flavouring in such dishes as Scotch broth, boiled leg of mutton, or corned beef.

Instead of using water in molasses or ginger cookies use the left-over coffee.

Yeast mixtures will rise more quickly and will be lighter if you lean the electric warming pad, turned low, against the side of the bowl.

If your food grinder persists in slipping, place a strip of sand paper, sand side up, under the grinder. It will hold firm.

Always clean wooden salad bowls, pastry boards and buffet accessories immediately after use. Wipe with a cloth wrung out of lukewarm water to which baking soda has been added. Never immerse or soak. Rub dry; keep away from heat. Don't chill in refrigerator.

To waterproof black rubbers which have become porous, give them a coat of auto top dressing. Apply the dressing until no light shows through the fabric.

When cleaning venetian blinds, I use a clip-type clothespin as a handy place marker. Then if I am called to the telephone or get to the place where I can step down the ladder, I snap the clothespin in place and never miss a slat in cleaning.

Butterscotch filling precaution—caramelizing fat and brown sugar gives you the real butterscotch flavour. Don't let it bubble too long and be sure to

add the milk slowly or it will boil all over the stove.

Here is a soup that warms the cockles of your heart. Empty a can of consomme into a saucepan. Don't add water; add an onion and an apple, chopped fine. Simmer until soft, then add a cup of milk, a dash of salt, pepper and cayenne. Heat to simmering point and serve with crackers and cheese.

Don't sheer away from beets—shred after you've peeled them. Cook in boiling water to which a little grated lemon or orange rind has been added.

SAVE BUTTER: If butter were formerly used in baking cakes and cookies, try other mild-flavoured fats, they will give good results: Select recipes for cakes, and pudding sauces, which call for only moderate amounts of fats: Grease pans with mild-flavoured fats: Do not use butter for frying. Fats from sausages, spareribs, etc., are all excellent for this purpose.

Drippings from beef and lamb roasts can be used in meat and vegetable dishes and for pan-frying many foods.

Serve cream sauces on vegetables using fats other than butter in the sauce. If you wish to use butter in some sauces, try cutting the amount called for in the recipe by one-half . . . do not change other ingredients.

Use grated cheese on vegetables in place of butter. Use cheese with bread crumbs for topping casserole dishes, etc.

Don't put butter on steaks, etc. before serving. For table use, make individual servings either as butter balls or squares.



FORMER HYDRO DOCTOR NAMED TO HIGH POST

BRIGADIER CHARLES P. FENWICK, who was at one time identified with the H.E.P.C., has been promoted to the rank of major-general, and appointed Director-General of the Canadian Army Medical Services.



General Fenwick, who is 53, and a native of St. Johns, Newfoundland, succeeds Major-General G. B. Chisholm, who is Deputy Minister of the new National Health Department.

According to information received, General Fenwick has been serving overseas as Deputy Director of Medical Services at headquarters of the 1st Canadian Army in North-western Europe.

During the First Great War, he was awarded the Military Cross, while serving with the rank of Captain.

General Fenwick was with the Commission for about four years, having served as assistant to the head surgeon during the construction of Hydro's Queenston-Chippawa development.

H.E.P.C. EMPLOYEES RETIRE

CYRUS S. FLOMMERFELT, Sr., of the operating department at Chippawa, and WILLIAM E. YORKE, of the operating department at Niagara Falls, have recently retired from active duties, after having served on the Commission's staff for over twenty-five years.

A dinner was held in their honour at Niagara Falls, on which occasion they were the recipients of Gladstone bags. Both Mr. Flommerfelt and Mr. Yorke were members of the Ontario Hydro Quarter Century Club.

J. B. DOUGALL RETIRES

JAMES BACON DOUGALL, commissioner of Barrie Public Utilities Commission, has retired from active duties after having served intermittently on the utilities commission for nineteen years, including ten years as chairman.

Mr. Dougall recalls that forty years ago, electric power for Barrie was generated by steam and was available only at night.

His many friends presented him with a lounge chair and footstool.

CLUB OFFICERS FOR 1945

Officers of the Ontario Hydro-Electric Club elected for the ensuing year are as follows:

Honorary president, Dr. Thomas H. Hogg; honorary vice-presidents, Hon. George H. Challies and W. Ross Strike; past president, P. T. Seibert; president, R. E. Brown; vice-president, H. C. Davies; general secretary, W. J. Greves; recording secretary, Rita Walsh; treasurer, J. W. Young; audit committee, P. F. Wayman and G. D. Cumming.

In addition to the executive committee listed above, there are sixty departmental representatives.

KILLED IN ACTION

Flt.-Lieut. WILLIAM HAROLD JAMNEY, R.C.A.F., formerly reported missing, has now been reported killed. Flt.-Lieut. Jamney was formerly with the H.E.P.C. accounting department, accounts receivable section.

THOMAS TURNER SMITH, R.C.C.S., formerly with the H.E.P.C. operating department, has been reported killed in action. He entered the Commission's employ as a groundman in June, 1932, and at the time of enlistment in 1942, was assistant patrolman at Kitchener.

Pte. GERALD KINGSHOTT, formerly of the H.E.P.C. construction department, is reported killed in action. Pte. Kingshott was employed as a temporary labourer on the DeCew Falls development from August, 1942, to April, 1943.

Pte. ROBERT N. POOLE, who was wounded in action last September, and later returned to the front somewhere in Holland, has now been reported killed in action. Pte. Poole was formerly with the H.E.P.C. municipal department, Sandwich rural power district.

USED SNOWSHOES

DURING the winter of 1903-1904, when Toronto traffic was tied up for three days by a snowstorm, J. H. Mackay of the Commission staff, made his way to work on snowshoes.

At that time, Mr. Mackay was with the Stark Telephone Light and Power Company, which was located on Toronto street near King. His home was on Wilton crescent, now Dundas street.

STREET CAR OVERTURNS: TWO HYDRO MEN ABOARD

**T. C. James, H.E.P.C. System Engineer, Tossed
Out of Seat — A. J. Irvine, Also of The
Commission Staff, is Removed to Hospital**

TO find himself suddenly tossed on top of a struggling heap of screaming men and women was the experience of T. C. James system engineer of the H.E.P.C., on December 12.

Mr. James, who escaped injury was one of the passengers on the east-bound Queen street car which overturned on Mutual street, killing one passenger and injuring others, including Andrew J. Irvine of the accounts payable section of the H.E.P.C.



T. C. James

Mr. Irvine was removed to St. Michael's Hospital, suffering from a possible fracture of the skull.

Hydro News obtained an eye-witness account of the accident from Mr. James, who was seated in the front end of the car.

"I was sitting on the left hand side of the car," Mr. James recalled. "I felt the car give a lurch and I was thrown forward. It then went slowly over on its side."

Mr. James said that he believed the reason he escaped injury was because he was thrown on top of the other passengers, and due to the fact that he was on the front end of the car which went over slowly and then whipped over the rear end of the car.

"I found myself on the top of a struggling heap of humanity, with people shouting and screaming. I managed to get my feet on something solid and, to stop people on the outside breaking in the windows overhead and scattering glass over those lying in the bottom of the overturned car. Meanwhile someone had smashed the large front window and the passengers began to crawl over the handrails and out the front window. One man in our section of the car was badly hurt and seemed to be suffering from fractured ribs. We carefully passed him out on his back flat on the arms of the passengers remaining in the car. He was rushed to hospital by ambulance. Looking back as I started to crawl toward the window I noticed that I was the last one in the front section of the trolley and that those in the rear were being assisted out by policemen and citizens who had rushed to the aid of the injured," he said.

Finding that he was not hurt Mr. James boarded the next eastbound car and returned to his home.



A. J. Irvine

O.M.E.A.—A.M.E.U. ANNUAL MEETINGS

Plans are now being completed for the annual meetings of the Ontario Municipal Electric Association and of the Association of Municipal Electrical Utilities, to be held in the Royal York Hotel, Toronto, on February 6 and 7.

According to present indications, over 1,000 delegates will attend these meetings. A joint session of the two associations will be addressed by Dr. Thomas H. Hogg, chairman of The Hydro-Electric Power Commission of Ontario, on Tuesday afternoon, while Percy Philips, Ottawa correspondent, New York Times, will be the speaker at a joint luncheon of the Electric Club of Toronto, O.M.E.A., and A.M.E.U., on Wednesday.

W. Ross Strike of Bowmanville, who is president of the O.M.E.A., is now an H.E.P.C. commissioner. The president of the A.M.E.U. is S. W. Canniff of Ottawa.

According to the A.M.E.U. tentative programme, on Wednesday morning the subject: "Future Planning And Training for Utility Managers" will be discussed by G. S. Matthews, Peterborough, O.M.E.A., and J. Clark Keith, Windsor, A.M.E.U.

On Wednesday afternoon, D. W. Atwater, manager of Illuminating Engineering Department, Westinghouse Electric and Manufacturing Company, Bloomfield, New Jersey, will speak on "Post-War Lighting."

A stop press announcement states that Senator George D. Aiken of Washington, D.C., will speak at a joint luncheon on Tuesday, February 6.

A.M.E.U. ELECTION BALLOT

THE ballot for the election of officers for the year 1945 will show the following:

President, R. J. Smith, Perth (Acclamation);

Vice-president, J. Clark Keith, Windsor (Acclamation);

Secretary, W. R. Harmer, and V. A. Beacock.

Treasurer, R. P. Darrell, H.E.P.C. (Acclamation);

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EMPIRE OF THE NORTH

(Continued from page 6)

Another important part of the Northern Ontario transportation system is the ship canal at Sault Ste. Marie which was constructed between 1888 and 1895. It is one and one-eighth miles in length and 150 feet in width, with the lock 900 feet long and 60 feet wide. This canal together with three larger ones on the American side are all used jointly to handle the water traffic between Lake Superior and the lower lakes. Shipments consist chiefly of iron ore, grain, package freight, and passenger service. In 1940 these four canals handled close to 90,000,000 tons of freight and over 53,000 passengers.

With the completion of the St. Lawrence canal system, which is contemplated in the post-war period, cargoes originating at Port Arthur, Fort William and Sault Ste. Marie, may be handled by ocean-going vessels without transfer at Montreal. Lake Superior ports will then be able to handle shipments of Northern Ontario's processed natural raw material products direct to the destination at all ocean ports throughout the world.

Aerial transport of both freight and passengers will, undoubtedly, become an important part of Northern Ontario's transportation system during the post-war period. Service of this kind is already in operation in the Red Lake and Pickle Lake mining districts, with Winnipeg, Kenora and Sioux Lookout as originating landing points. As this great north country begins to open up under post-war conditions for further industrial effort and expansion, its lakes scattered throughout its entire area will furnish ideal landing facilities. Many districts can, therefore, be brought into direct contact with rail heads regardless of distance and inaccessibility by other means of transport. In all probability the populated centres of this north country will be provided with suitable landing fields and air terminal facilities for through and local service to the eastern and western air ports, and for branch line service to the inland centres of mining operations which cannot be served by rail connections.

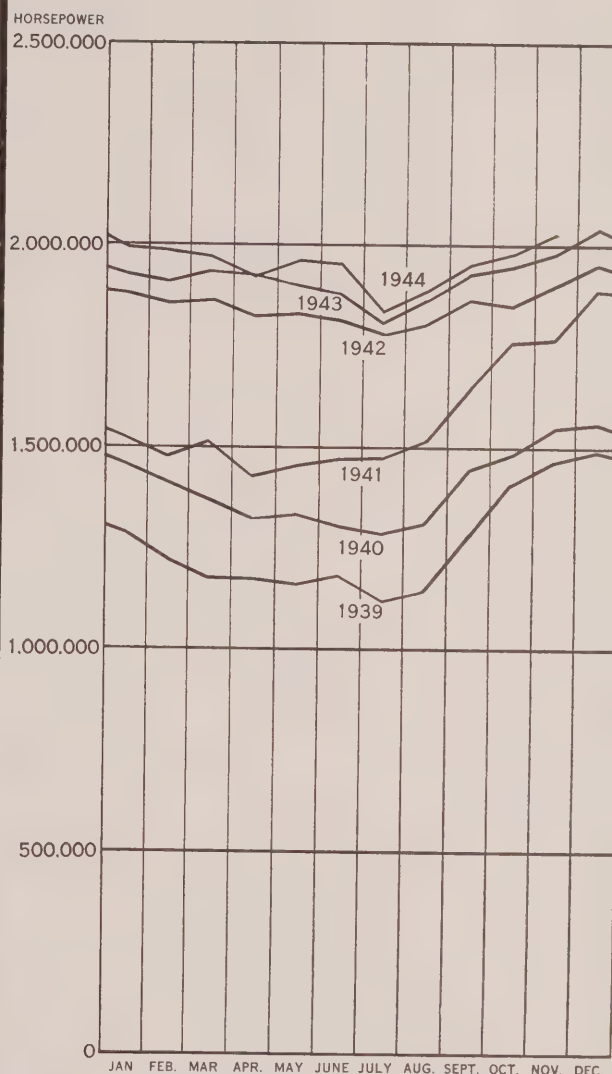


In Britain the people spent five years learning to walk in the blackout. Then they turned on the lights*

SOUTHERN ONTARIO SYSTEM

EMBRACING NIAGARA, GEORGIAN BAY AND EASTERN ONTARIO DIVISIONS

PRIMARY LOAD



PRIMARY LOADS

AREA SERVED BY	MAXIMUM 20-MINUTE PEAK H.P.		PER CENT INCREASE
	NOVEMBER, 1944	NOVEMBER, 1943	
SOUTHERN ONTARIO SYSTEM . . .	2,023,110	1,959,945	+ 3.2
THUNDER BAY SYSTEM	126,206	108,338	+ 16.5
NORTHERN ONTARIO PROPERTIES	198,139	192,124	+ 3.1
TOTAL	2,347,455	2,260,407	+ 3.9

PRIMARY AND SECONDARY LOADS

SOUTHERN ONTARIO SYSTEM . . .	2,100,992	2,054,008	+ 2.3
THUNDER BAY SYSTEM	134,450	131,247	+ 2.4
NORTHERN ONTARIO PROPERTIES	266,102	253,786	+ 4.9
TOTAL	2,501,544	2,439,041	+ 2.6

MUNICIPAL LOADS, OCTOBER, 1944

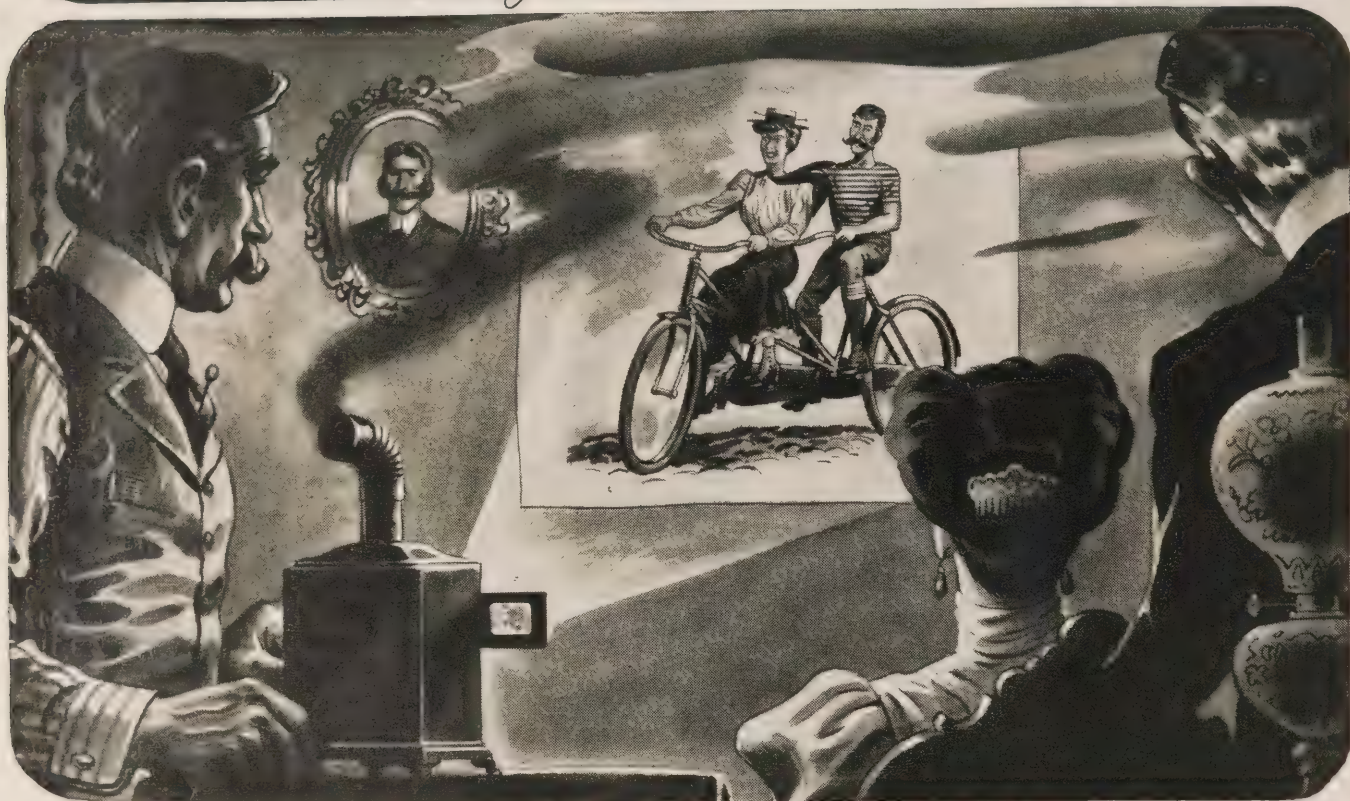
SOUTHERN ONTARIO SYSTEM NIAGARA DIVISION (25-Cycle)

	H.P.	Popula- tion		H.P.	Popula- tion
Acton	1,722	1,903	Erie Beach	8	21
Agincourt	212	P.V.	Essex	616	1,886
Ailsa Craig	142	487	Etobicoke	8,008	V.A.
Alvinston	119	649	Exeter	767	1,654
Amherstburg	973	2,704	Fergus	1,372	2,759
Ancaster Twp.	404	V.A.	Fonthill	209	860
Arkona	61	403	Forest	585	1,562
Aurora	1,410	2,821	Forest Hill	7,273	12,172
Aylmer	896	1,985	Galt	12,084	15,126
Ayr	196	760	Georgetown	1,848	2,452
Baden	663	P.V.	Glencoe	209	763
Beachville	789	P.V.	Goderich	1,710	4,674
Beamsville	441	1,227	Granton	75	P.V.
Belle River	208	836	Grimsby	942	1,989
Blenheim	626	1,873	Guelph	12,324	23,074
Blyth	128	662	Hagersville	1,135	1,524
Bolton	221	629	Hamilton	162,448	164,719
Bothwell	134	683	Harriston	442	1,292
Brampton	2,907	6,157	Harrow	663	1,092
Brantford	22,702	31,622	Hensall	196	686
Brantford Twp.	1,254	V.A.	Hespeler	2,883	2,938
Bridgeport	144	P.V.	Highgate	100	372
Bridgen	91	P.V.	Humberstone	629	2,831
Brussels	151	784	Ingersoll	3,382	5,757
Burford	233	P.V.	Jarvis	195	513
Burgessville	50	P.V.	Kingsville	650	2,453
Burlington	1,667	3,925	Kitchener	27,830	35,465
Burlington Beach	459	1,474	Lambeth	120	P.V.
Caledonia	408	1,430	LaSalle	290	907
Campbellville	42	P.V.	Leamington	1,993	6,048
Cayuga	147	700	Listowel	1,544	2,984
Chatham	6,911	17,184	London	40,788	81,567
Chippawa	384	1,228	London Twp.	578	V.A.
Clifford	118	491	Long Branch	1,437	4,258
Clinton	706	1,879	Lucan	185	643
Comber	155	P.V.	Lynden	121	P.V.
Cottam	83	P.V.	Markham	355	1,175
Courtright	53	355	Merlin	92	P.V.
Dashwood	127	P.V.	Merritton	11,700	2,916
Delaware	75	P.V.	Milton	1,487	1,915
Delhi	505	2,430	Milverton	415	994
Dorchester	115	P.V.	Mimico	2,780	8,785
Drayton	122	529	Mitchell	733	1,670
Dresden	442	1,525	Moorefield	48	P.V.
Drumbo	103	P.V.	Mount Brydges	95	P.V.
Dublin	62	P.V.	Newbury	33	288
Dundas	3,177	5,245	New Hamburg	667	1,441
Dunnville	1,495	3,916	Newmarket	1,934	3,800
Dutton	269	830	New Toronto	11,163	9,469
East York Twp.	9,261	41,573	Niagara Falls	10,763	20,371
Elmira	1,316	2,069	Niagara-on-the-Lake	869	1,764
Elora	429	1,185	North York Twp.	11,237	V.A.
Embro	161	420	Norwich	449	1,301
Erieau	136	218	Oil Springs	192	541
			Otterville	114	P.V.
			Palmerston	596	1,400
			Paris	1,757	4,604
			Parkhill	230	1,029
			Petrolia	1,038	2,768
			Plattsville	141	P.V.
			Point Edwards	1,794	1,199
			Port Colborne	1,580	6,928
			Port Credit	916	1,934
			Port Dalhousie	906	1,599
			Port Dover	484	1,790
			Port Rowan	127	700
			Port Stanley	472	824
			Preston	4,088	6,656
			Princeton	134	P.V.
			Queenston	120	P.V.
			Richmond Hill	494	1,295
			Ridgetown	687	1,986
			Riverside	1,246	5,235
			Rockwood	123	P.V.
			Rodney	162	758
			St. Catharines	31,190	34,541
			St. Clair Beach	106	138
			St. George	166	P.V.
			St. Jacobs	359	P.V.
			St. Marys	1,683	4,009
			St. Thomas	8,092	17,045
			Sarnia	12,334	18,599
			Scarborough Twp.	4,997	V.A.
			Seaforth	1,012	1,782
			Simcoe	3,009	6,304
			Smithville	180	P.V.
			Springfield	67	382
			Stamford Twp.	3,095	8,275
			Stoney Creek	233	933
			Stouffville	311	1,198
			Stratford	7,381	17,163
			Strathroy	1,533	2,834
			Streetsville	233	701
			Sutton	231	949
			Swansea	2,989	7,100
			Tavistock	632	1,080
			Tecumseh	460	2,391
			Thamesford	229	P.V.
			Thamesville	228	816
			Thedford	151	598
			Thorndale	89	P.V.
			Thorold	2,874	5,284
			Tilbury	1,563	1,923
			Tillsonburg	1,460	4,602
			Toronto	374,868	657,612
			Toronto Twp.	3,219	V.A.
			Wallaceburg	4,535	4,802
			Wardsville	38	221
			Waterdown	240	867
			Waterford	432	1,294
			Waterloo	6,457	8,968
			Watford	385	1,023

MUNICIPAL LOADS, OCTOBER, 1944

	H.P.	Popula- tion		H.P.	Popula- tion		H.P.	Popula- tion
Welland -----	12,319	14,899	Neustadt -----	45	431	Kempville -----	331	1,230
Wellesley -----	121	P.V.	Orangeville -----	758	2,558	Kingston -----	16,412	29,545
West Lorne -----	205	768	Owen Sound -----	6,048	13,559	Lakefield -----	507	1,301
Weston -----	5,539	6,333	Paisley -----	121	530	Lanark -----	94	686
Wheatley -----	215	761	Penetanguishene -----	1,065	4,177	Lancaster -----	63	570
Windsor -----	54,909	118,040	Port Carling -----	145	520	Lindsay -----	3,740	8,345
Woodbridge -----	614	1,100	Port Elgin -----	438	1,415	Madoc -----	208	1,130
Woodstock -----	8,727	12,339	Port McNicoll -----	93	950	Marmara -----	140	1,004
Wyoming -----	84	538	Port Perry -----	295	1,175	Martintown -----	45	P.V.
York Twp. -----	20,281	77,175	Priceville -----	10	P.V.	Maxville -----	120	811
Zurich -----	132	P.V.	Ripley -----	95	420	Millbrook -----	113	749
(66½ Cycle)			Rosseau -----	33	305	Morrisburg -----	327	1,484
Bronte -----	181	P.V.	Shelburne -----	277	1,053	Napanee -----	1,428	3,241
Oakville -----	1,447	3,369	Southampton -----	542	1,467	Newcastle -----	163	701
Trafalgar Twp. -----	613	V.A.	Stayner -----	279	1,106	Norwood -----	159	710
GEORGIAN BAY DIVISION			Sunderland -----	85	P.V.	Omeme -----	185	630
(60-Cycle)			Tara -----	106	510	Orono -----	103	P.V.
Alliston -----	373	1,700	Teeswater -----	171	973	Oshawa -----	18,038	26,610
Arthur -----	165	1,089	Thornton -----	24	P.V.	Ottawa -----	38,462	150,816
Bala -----	146	355	Tottenham -----	117	532	Perth -----	1,818	4,187
Barrie -----	4,350	9,599	Uxbridge -----	309	1,480	Peterborough -----	13,819	24,977
Beaverton -----	236	941	Victoria Harbour -----	67	979	Pictou -----	1,285	3,400
Beeton -----	85	617	Walkerton -----	1,014	2,534	Port Hope -----	2,808	4,997
Bradford -----	227	1,041	Waukegan -----	104	P.V.	Prescott -----	1,485	3,318
Brechin -----	41	P.V.	Warton -----	334	1,750	Richmond -----	75	428
Cannington -----	195	761	Windermere -----	36	117	Russell -----	73	P.V.
Chatsworth -----	81	333	Wingham -----	699	2,149	Smiths Falls -----	3,093	7,741
Chesley -----	559	1,812	Woodville -----	69	439	Stirling -----	290	947
Coldwater -----	178	545	EASTERN ONTARIO DIVISION			Trenton -----	5,110	8,183
Collingwood -----	2,971	6,249	(60-Cycle)			Tweed -----	308	1,181
Cookstown -----	85	P.V.	Alexandria -----	249	1,976	Warkworth -----	80	P.V.
Creemore -----	139	661	Apple Hill -----	50	P.V.	Wellington -----	302	948
Dundalk -----	205	686	Arnprior -----	1,188	4,019	Westport -----	110	725
Durham -----	359	1,874	Athens -----	105	626	Whitby -----	1,437	4,236
Elmvale -----	153	P.V.	Bath -----	44	325	Williamsburg -----	85	P.V.
Elmwood -----	63	P.V.	Belleville -----	8,236	15,498	Winchester -----	374	1,017
Flesherton -----	68	452	Bloomfield -----	137	636	THUNDER BAY SYSTEM		
Grand Valley -----	135	645	Bowmanville -----	2,800	3,850	(60-Cycle)		
Gravenhurst -----	1,300	2,261	Brighton -----	468	1,462	Fort William -----	16,052	30,370
Hanover -----	1,345	3,190	Brockville -----	5,095	11,112	Nipigon Twp. -----	247	V.A.
Holstein -----	20	P.V.	Cardinal -----	295	1,602	Port Arthur -----	24,497	24,217
Huntsville -----	1,219	2,943	Carleton Place -----	1,803	4,143	NORTHERN ONTARIO		
Kincardine -----	736	2,483	Chesterville -----	278	1,094	PROPERTIES		
Kirkfield -----	27	P.V.	Cobden -----	121	643	Nipissing District		
Lucknow -----	452	856	Cobourg -----	2,242	5,907	(60-Cycle)		
MacTier -----	134	V.A.	Colborne -----	228	960	North Bay -----	5,140	16,013
Markdale -----	179	776	Deseronto -----	244	1,002	Patricia District		
Meaford -----	681	2,759	Finch -----	108	396	(60-Cycle)		
Midland -----	4,569	6,754	Frankford -----	172	1,095	Sioux Lookout -----	310	1,967
Mildmay -----	142	764	Hastings -----	137	823	Sudbury District		
Mount Forest -----	473	1,936	Havelock -----	158	1,103	(60-Cycle)		
			Iroquois -----	254	1,123	Capreol -----	246	1,660
						Sudbury -----	10,399	36,724

HYDRO *Lightens* The Way!



THEY WOULDN'T HAVE BELIEVED IT!

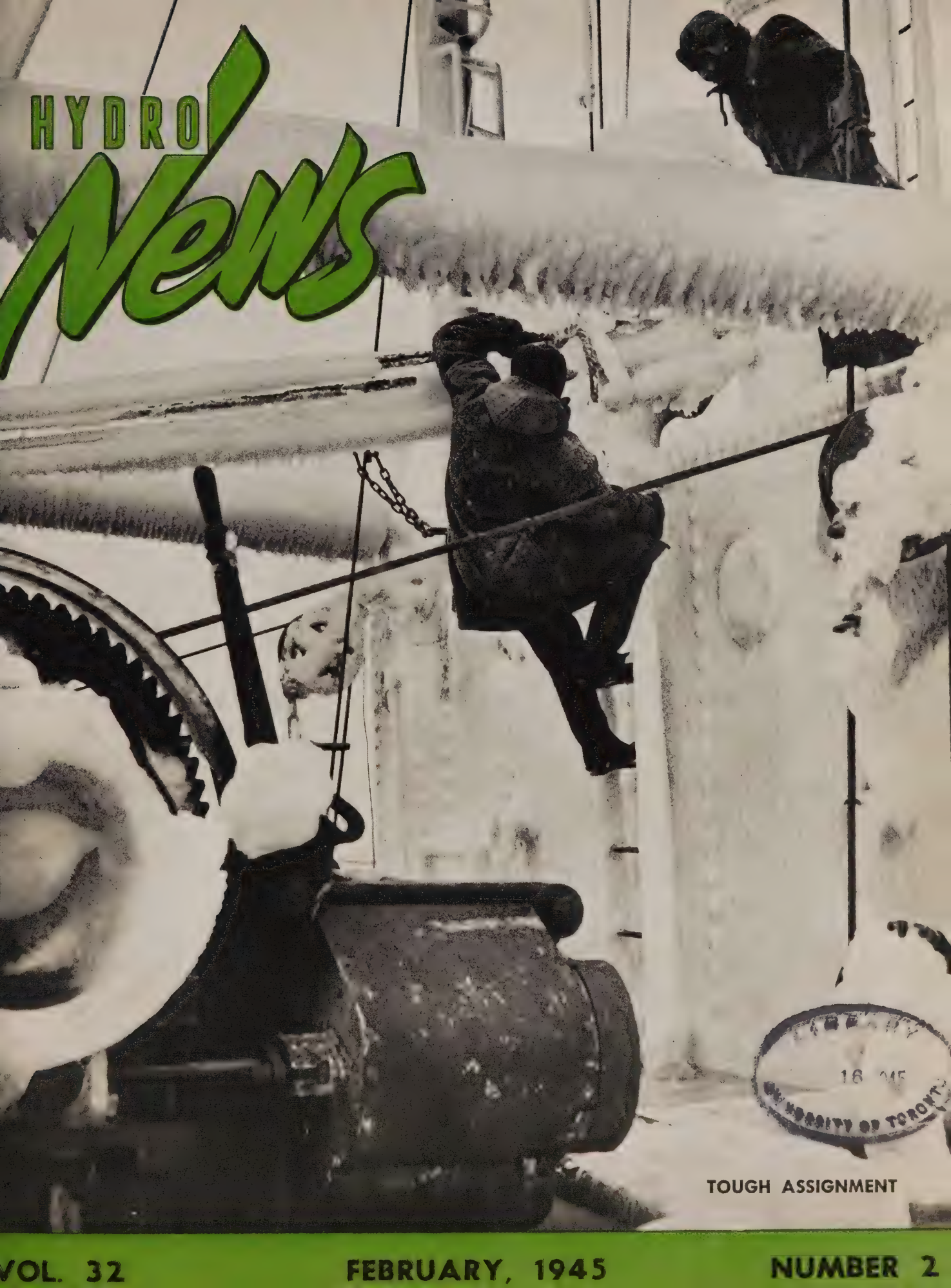
● The gay nineties weren't so gay, by today's standards. Think how the folks then would have felt had anyone told them of the wonders of the modern motion picture theatre. They wouldn't have believed it!

In the transition from those days to this modern age we owe a great deal to electricity. Today—we are dependent upon it in hundreds of ways. It will do more for us in the days to come!

In the future Hydro will serve industry, the home and the farm in even greater measure than in the past. Plan now, to let Hydro lighten your tasks and make your living more comfortable in the brighter days ahead.



THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO



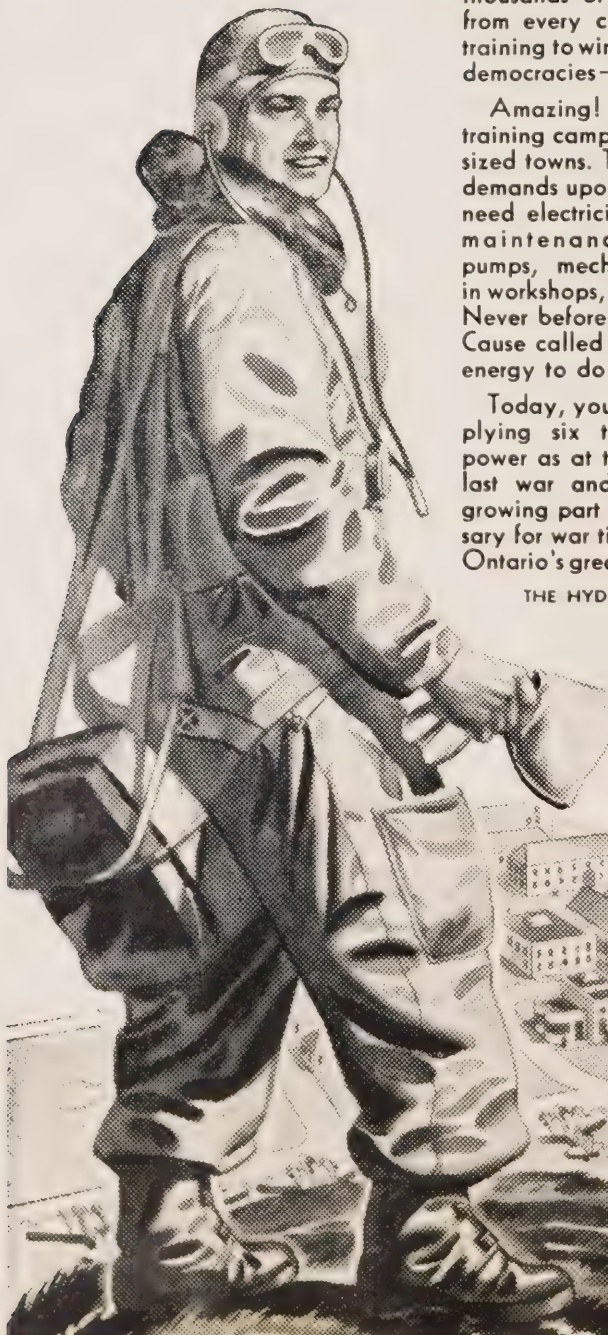
HYDRO!

News



TOUGH ASSIGNMENT

Victory IS IN THE MAKING AND **HYDRO** SPEEDS THE WORK!



● Right here in Ontario, thousands of young patriots from every continent are in training to win Victory for the democracies—from the Air

Amazing! Some of our training camps are like good sized towns. They make new demands upon Hydro. They need electricity for lighting, maintenance, airfields, pumps, mechanisms, radio; in workshops, rooms, kitchens. Never before has so great a Cause called upon electrical energy to do so much.

Today, your Hydro is supplying six times as much power as at the close of the last war and a large and growing part of this is necessary for war time production. Ontario's great aircraft indus-

tries are powered by Hydro, also factories and foundries making all manner of military equipment. This war is not only mechanized but electrified!

You are, of course, proud that your Hydro System is playing so great a part in the victory program. Of course, you will economize in your use of electric energy for all peace-time pursuits—and forego for a while further extensions of electric service. With all of us, war needs must come first!

Electrical Thrift Hints

Always use the heating element best suited to the work in hand. That saves current, prevents boil-overs. Use automatic controls as directed. Don't leave elements on 'high' a moment longer than necessary. Have your dealer or local 'Hydro' put your appliances in good order.

THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO

BLOOD DONORS ON THE HOME FRONT
AID BLOOD GIVERS ON THE BATTLE FRONT

REMEMBER—it's YOUR
HYDRO
SYSTEM—

OUR WAR EFFORT RELIES ON IT...
YOUR COMMUNITY DEPENDS ON IT...
YOUR SUPPORT MAKES IT STRONG



THE HYDRO - ELECTRIC POWER COMMISSION OF ONTARIO

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The Front Cover



AS folk stand shivering on a sub-zero morning waiting for a warm street car to come along to get them to their places of business, they may or may not think of what it would be like at sea. A graphic impression of winter conditions on the Atlantic is portrayed in this month's front cover, "Tough Assignment," featuring a boat of the Canadian merchant marine. In this case, the boys have to worry about torpedoes and not street cars.

Volume 32

February, 1945

Number 2

CONTENTS

	Page
St. Valentine's Day - - - - -	2
Page Three - - - - -	3
Bright Lights - - - - -	4
Renfrew and Almonte Join Hydro - - - - -	9
Empire Of The North - - - - -	10
They Stayed For Dinner - - - - -	13
Safety Council Awards - - - - -	18
Harnessing Horsepower - - - - -	20
Hydro Home Forum - - - - -	24
Annual Meetings Cancelled - - - - -	25
Lighter Lines - - - - -	26
Monthly Load Summary - - - - -	27
Municipal Loads - - - - -	28





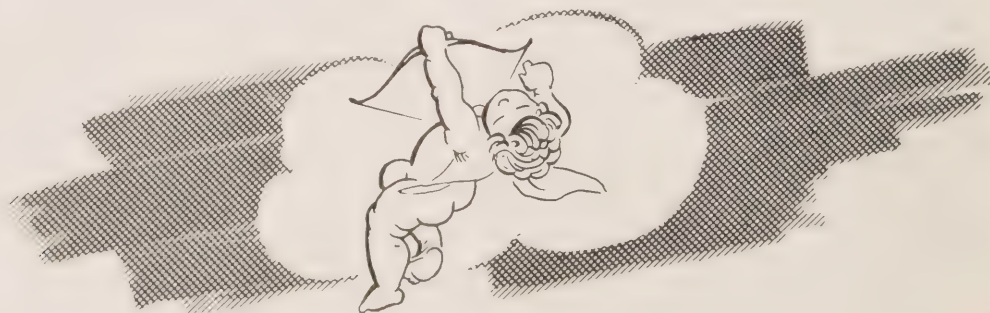
"THIS is the day on which those charming little mis-sives ycleped Valentines cross and inter-cross each other at every street and turning. The weary and all forespent twopenny postman sinks beneath a load of delicate embarrassments, not his own. . . . In these little visual interpretations, no emblem is so common as the heart—that little three-cornered exponent of all our hopes and fears—the bestuck and bleeding heart."

So wrote Charles Lamb in his *Essays of Elia*, and his description is as appropriate in this year of grace, 1945; for the sentiment which since time immemorial, has made St. Valentine's Day unique in the calendar will always remain the same—the love of a man for a maid—the love that gives a surpassing sweetness to the days of our youth, and invites fond memories to lighten our declining years.

The anonymous character of Valentine greetings is part of their charm. Guessing who sent it is as fascinating as working at a cross-word puzzle, and the solution is more likely to bring a joyful heart-thrill than a sick headache.

There are two martyred St. Valentines whose anniversary falls on February 14. But our celebration seems to be connected with neither. Their festival day has always been just a pin-up date for our best girl. As Drayton puts it:

"Muse, bid the morn awake!
Sad winter now declines,
Each bird doth choose a mate;
This day's St. Valentine's."



* *Page Three* *

A NATIONAL SERVICE

WARTIME conditions can upset "the best laid plans o' mice and men."

An illustration of this fact is to be found in the cancellation of the annual meetings of the Ontario Municipal Electric Association and of the Association of Municipal Electrical Utilities originally scheduled for February 6 and 7 in Toronto.

While the cancellation will come as a big disappointment to some twelve hundred delegates throughout Ontario, they will have the satisfaction of knowing that it will help ease transportation and hotel accommodation problems which are acute at this particular time.

These problems have been arising quite frequently in the planning of conventions which attract large gatherings of delegates who require sleeping accommodation and who have to travel considerable distances.

The deliberations of both the O.M.E.A. and A.M.E.U. over a long period of years, have contributed much to the progress of Hydro, and have reflected the sound co-operative and democratic basis upon which Ontario's renowned public ownership enterprise was established.

The cancellation of the February meetings is but a temporary measure dictated by conditions created by the war and might be regarded as a national service which will enhance the important role of these associations in relation to Hydro.

NORTHERN EL DORADO

WHEN the "cease fire" is given and Canadians can turn their minds and hands to peacetime pursuits, the vast resources of Ontario's northern hinterland will play an important part in Canada's future development as one of the great trading nations of the world.

This territory, embracing a vast expanse of virgin forest and rock, extends east to west, from the Ottawa river to the Manitoba

boundary, to the French river on the south, and to the Hudson bay on the north.

Rich in timber and minerals and in water power resources, this great country gives promise of becoming an important centre for the production of many natural and finished products.

One of the vital factors in speeding the industrial development of Northern Ontario is low-cost Hydro power, which, to date, has played a major role in the growth of the mining industry. The substantial reductions in power rates to gold mines being made by Hydro will serve to give further impetus to that industry when hard rock miners return to resume their peacetime occupations.

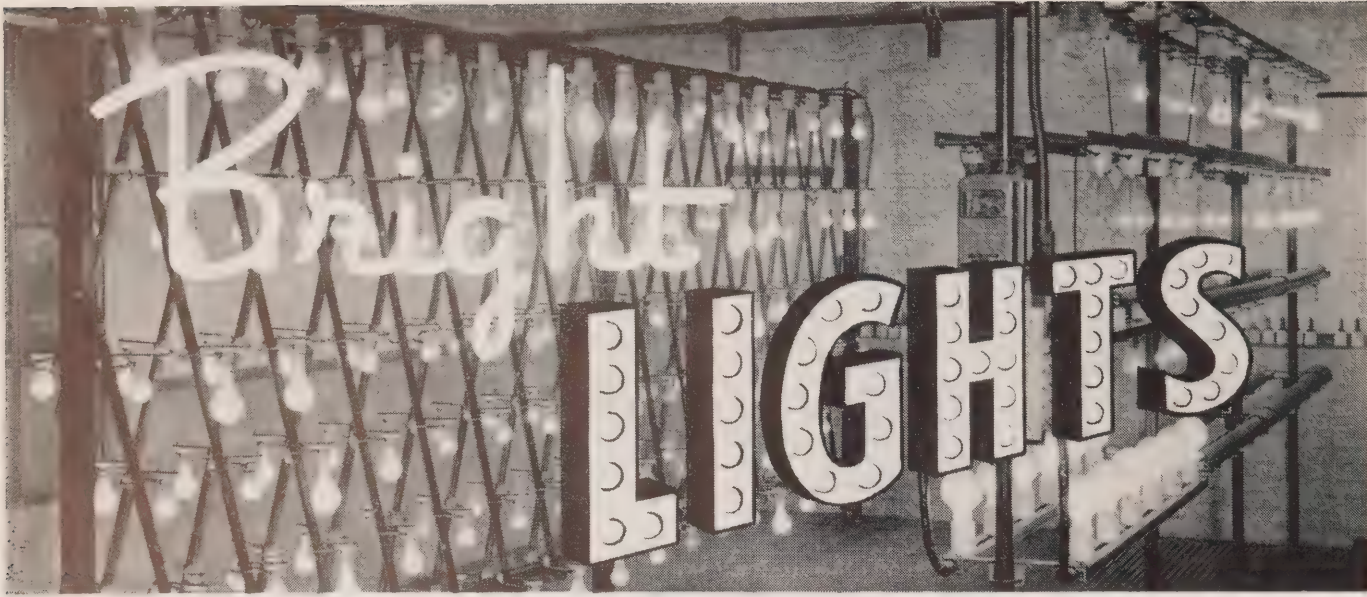
An insight into some of the possibilities of this Northern El Dorado is revealed in the interesting "Empire Of The North" series of articles by T. C. James of the Commission staff. The second in the series is featured in this issue of Hydro News.

LIGHTING THE WAY

HYDRO is now so closely interwoven with the daily life of Ontario that it has become second nature to press a button or pull a lever whenever electricity is required.

One of its very essential tasks is to provide light, and today the importance of good illumination is generally recognized. This fact is revealed in the modern lighting equipment to be found in many homes, schools, churches, factories, office buildings, as well as on the farm.

The development of artificial lighting, however, has been very slow, starting many centuries ago with the wood fire, which was probably the first light source. An interesting story on the evolution of artificial illumination is told in the article, "Bright Lights," published in this issue of Hydro News. This story sets forth the important part that The Hydro-Electric Power Commission of Ontario has played in setting and maintaining a maximum standard of efficiency in the field of lamp manufacturing.



THIS ILLUSTRATION shows a testing rack on which percentages of all Hydro lamps are given a burning life test, and checked for mechanical perfection to assure the rated Hydro lamp life of 1,500 hours.

DAYS of the flickering candle and smoky oil lamp seem very remote and unreal in the light of present-day standards and trends in the field of illumination.

One of the important and far-reaching developments of recent years in setting and maintaining a maximum standard of efficiency in the manufacture of Hydro lamps has been initiated by The Hydro-Electric Power Commission of Ontario. This move has involved the setting up of specifications for all lamps bearing the name of Hydro.

The story of the Commission's connection with the making of lamps dates back many years, and forms another interesting chapter in the history of Hydro service to the people of Ontario.

The lamps available in 1912 were not regarded as shining examples of quality products. Many of these lamps were imported. At that time electricity was being used largely for lighting, and Hydro, which was a growing and lusty public ownership baby, was concerned about the unreliable service provided by many of the lamps which were being sold to its consumers.

Recognizing the fact that someone or some organization had to take the initiative if the quality of lamps were to be improved, the Commission, through its research engineers, set about the task of establishing specifications for a quality and economical long-life lamp. As a result of their investigations, the Commission was able to submit to lamp manufacturers the specifications for a 1,500-hour lamp. Finally, a lamp made in Holland was selected as the product which "measured up" to the Commission's standards. These lamps bore the name "Hydro" and became known as "Hydro Lamps."

These lights found ready acceptance among Hydro consumers, and the Commission continued to purchase from

the Dutch company until 1916 or 1917 when the supply was cut off due to wartime restrictions.

Following the war, a large number of lamps of no definite life rating, many from Japan and other foreign countries, began to appear on the Ontario market, and once again the Commission went to work to arrange for a reliable source of supply of lights which would meet Hydro specifications. This time, the Commission found that the product of a Canadian company met the established standards.

Since that time, it has been possible on many occasions, through the constant supervision of Hydro engineers, to increase the efficiency of the Hydro lamp without impairing its economical life of 1,500 hours.

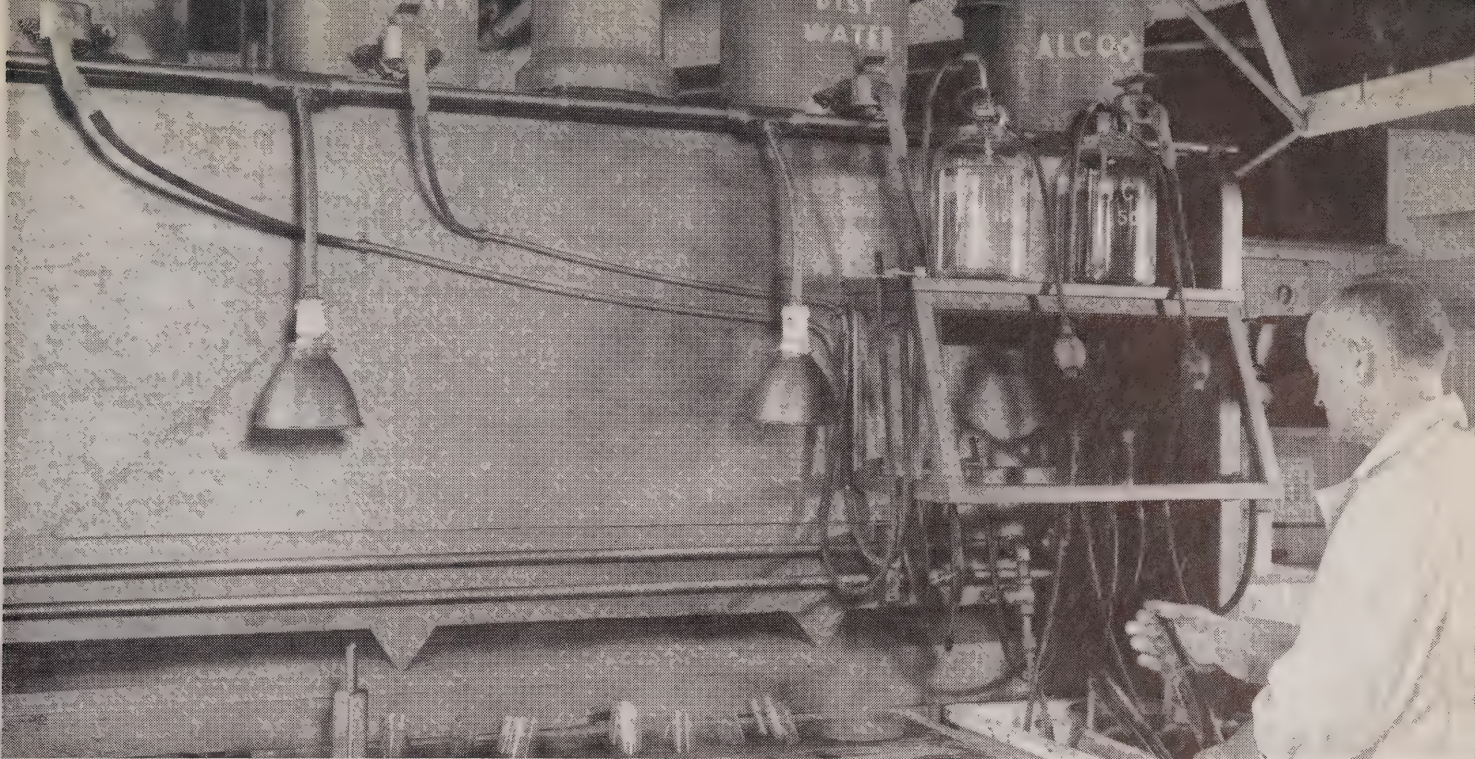
The benefits of Hydro lamps, are not restricted to domestic and industrial consumers. Municipalities charged with the responsibility of providing adequate and economical street lighting, can use to advantage the multiple 1,500-hour lights or the Hydro series lamps which have an average life of 2,500 hours.

The direct result of years of testing on the part of Hydro engineers and laboratory technicians, these specifications call for some 480 individual examinations and tests in the making of Hydro lamps, beginning in the earliest stages with the raw materials and continuing right through to the finished product.

As a result of the experience gained, a rated life of 1,500 hours was adopted for general use on Hydro systems where power costs were low. The average life rating of many other lamps is 1,000 hours.

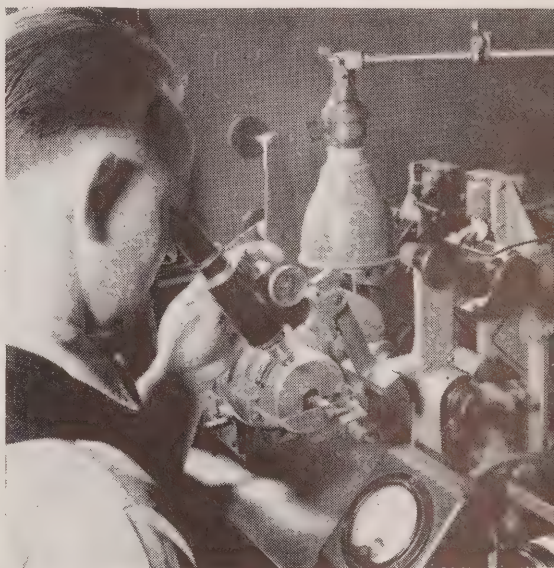
The study of light has long been one of man's greatest interests from the days of the early sunworshippers. However, man was not satisfied to regulate his day by the rising

(Continued on page 6)



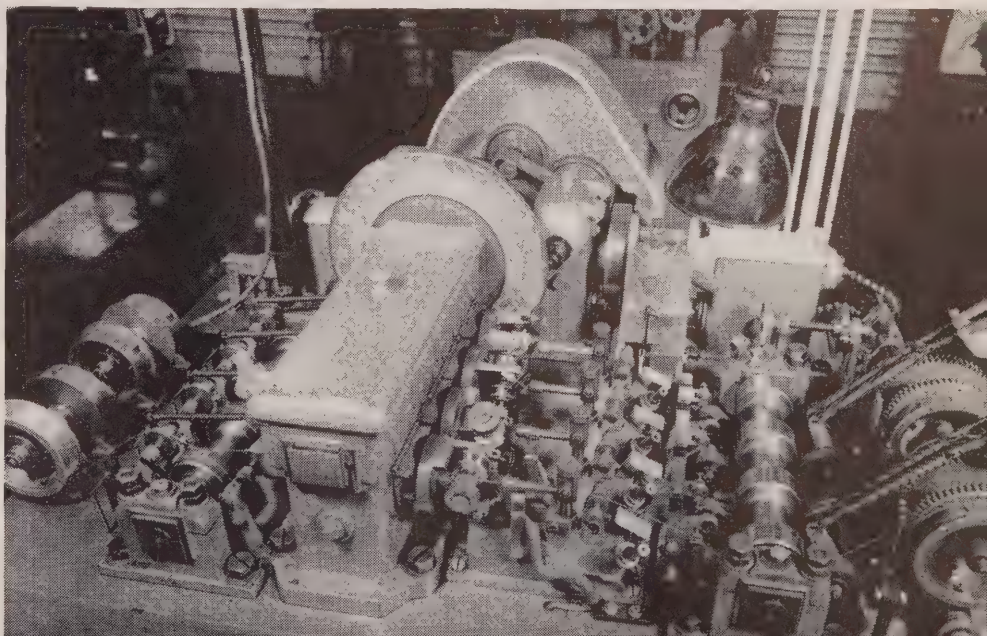
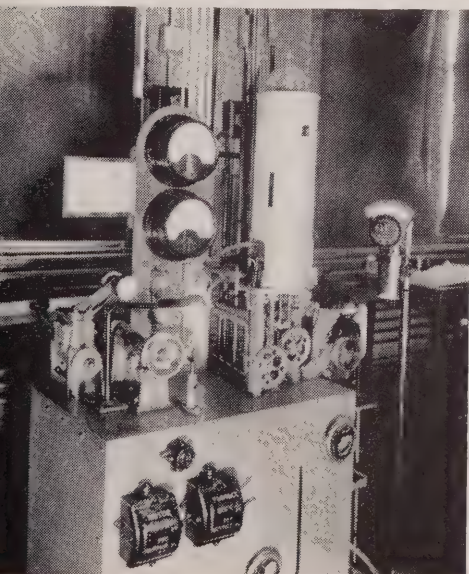
TO PREVENT disturbing the spacing between each accurately wound coil, a chemical process is necessary to remove the mandrel or core from the filament coil. This is an exacting operation in that it is timed to a split second, and the chemicals must be of the correct strength.

MICROSCOPIC EXAMINATIONS (right) are made of fine filament coils while they are being wound automatically at speeds ranging from 3,500 to 10,000 revolutions per minute. These lamps require precision manufacturing to twenty-four millionths of an inch.



AFTER THE filament coils have been wound, and before they are cut to length, they are annealed. The coils move slowly through cylindrical ovens (below) in an atmosphere of hydrogen gas, heated to the correct annealing temperature.

IN THE picture below is shown a four-head filament coiling machine, which automatically winds the tungsten wire around the core or mandrel at a predetermined number of turns per inch, and at the same time spaces off the filament anchoring areas.



BRIGHT LIGHTS

(Continued from page 4)

and the setting of the sun, and for thousands of years he has tried to produce a satisfactory artificial light. While he has not been in the dark altogether on this subject, very slow progress has marked the evolution of lighting, and it was not until the nineteenth century that electricity was used in producing artificial lighting. Great credit is due to Benjamin Franklin, however, who in 1752 experimented with the Leyden jar (electrical condenser consisting of a glass jar or bottle coated with tinfoil) and discovered the secret of lightning—Nature's electricity.

Had Flaming Start

In tracing the historical development of artificial illumination, the wood fire is recorded as probably the first means of securing light at night. A burning stick, called a fire brand or torch, was sometimes picked from the fire in order to light the way when walking. Oily vegetables, fish and animal carcasses have also been used as solid illuminants. From this flaming start, lighting has passed on to the sperm oil lamp, tallow candle, kerosene gas, gas mantle, arc-lamp, carbonized filament, vacuum lamp, tantalum filament, tungsten filament and now the latest fluorescent gaseous discharge lamps, which are considered the closest thing to daylight yet made. Today, electric light has become so commonplace that it is recognized as being vital in all walks of life.

But to get back to Hydro lamps—there's an interesting story to tell. In the first place, to meet the standards of superior quality found in Hydro lamps, constant supervision is maintained by competent engineers and technicians, and only the most modern and efficient equipment is utilized. And, it is reported, some of the machines used in the production of these lamps are the only ones of their kind in North America.

If you were to examine the "innards" of a Hydro lamp in the process of production, you would find lengths of filament coils wound around a core or mandrel. This is done on a four head filament coiling machine which winds the tungsten wire around the core at a predetermined number of turns per inch with a definite gap clearance between each turn and also spaces off the filament anchoring areas.

There are many types of filament coils—each wattage for a given voltage having a different length and diameter with a varying number of coils per inch. These are wound on a specified mandrel or core with an allowable diameter variation of only twenty-four millionths of an inch.

When the smaller or finer filament coils are required, a high speed coiling machine is used. It operates at speeds varying from 3,500 to 10,000 revolutions per minute. It is interesting to note that the diameter of the tungsten filament wire used in these lamps has a variation tolerance, plus or minus, of eighty-six ten millionths of an inch. That's cutting things pretty fine!

After the filament coils have been wound, and before they are cut to length, they are annealed. The coils move

slowly through the oven cylinder in an atmosphere of hydrogen gas and just enough electrical current is passed through the filament coils to cause them to heat to the proper annealing temperature. This operation is also controlled with hairline accuracy.

A Precision Process

After the filament coils have been cut to their proper length, the mandrel or core must be entirely removed. As these cannot be pulled or drawn out without destroying the accurately spaced coils or turns, the core must be dissolved with an acid solution which corrodes and eats it away without leaving a trace of it in the centre of the coil. This process requires precision accuracy in that the chemicals must be of the correct strength and timed to a split second.

Every particle of the mandrel or core must be removed from the filament, because if any were left adhering to the inside of the coil, and these were to cross or bridge two or more turns of the coil, the current, when turned on, would probably short circuit at this point and cause early failure of the lamp.

Microscopic examinations are made of every filament coil and imperfections are discarded.

In Hydro lamps of 40 watts and up, 99.98 per cent pure argon gas is used. This removes all trace of moisture on the inside and ensures the quality of the lamps.

Another part of the lamp is the stem which comprises the flare, arbor and lead wires (four separate pieces). These parts are assembled by an automatic machine, which first places the two glass parts in position, then inserts the two lead wires, fuses them to the glass parts, welds and presses them together, which seals the lead wires in their related positions. This completes the stem assembly and it is ready for the mounting mill.

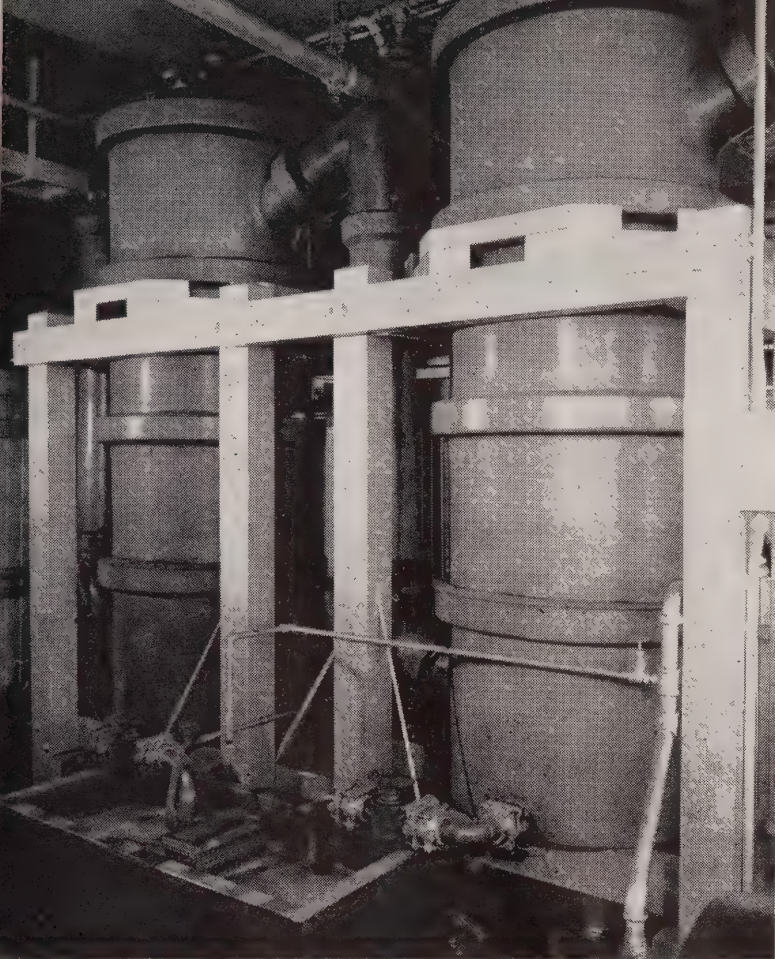
Hydro Lamps Meet Rigid Tests

The mounting mill shapes, cuts and inserts the very fine anchor wires which hold the filament, picks up and inserts the filament coil, and clamps each of its ends to the lead wires. Very modern equipment is used for this process and it is capable of producing 1,500 mounts or finished stems an hour.

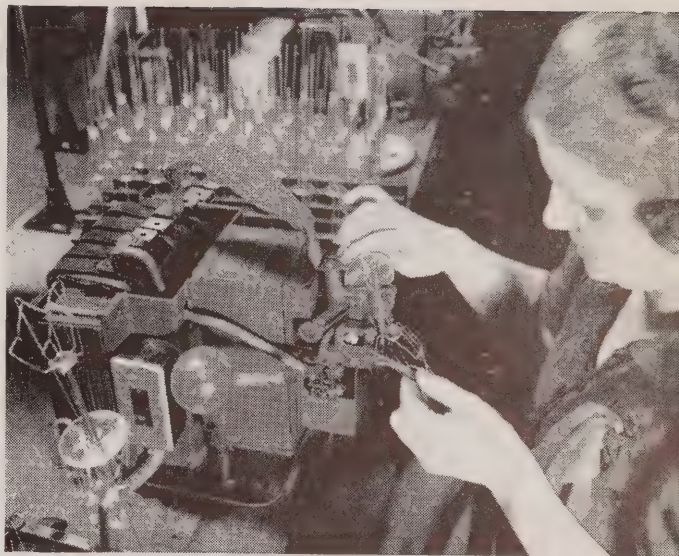
Now all the parts are assembled into one piece that is inserted in the glass bulb which, by the way, is the proper designation for the glass envelope before it is sealed. The exact amount of argon gas is then put in and the bulb is hermetically sealed.

The last operation is affixing the metal bases to the finished bulbs and soldering the lead-in wires to the contact points—one at the top centre of the base and the other to its side. And the lamp is completed.

These facts indicate the way in which Hydro, through its research engineers, has made a noteworthy contribution toward raising and maintaining a standard for the manufacture of all types of lamps. In this way it has rendered another important service to the people of Ontario.



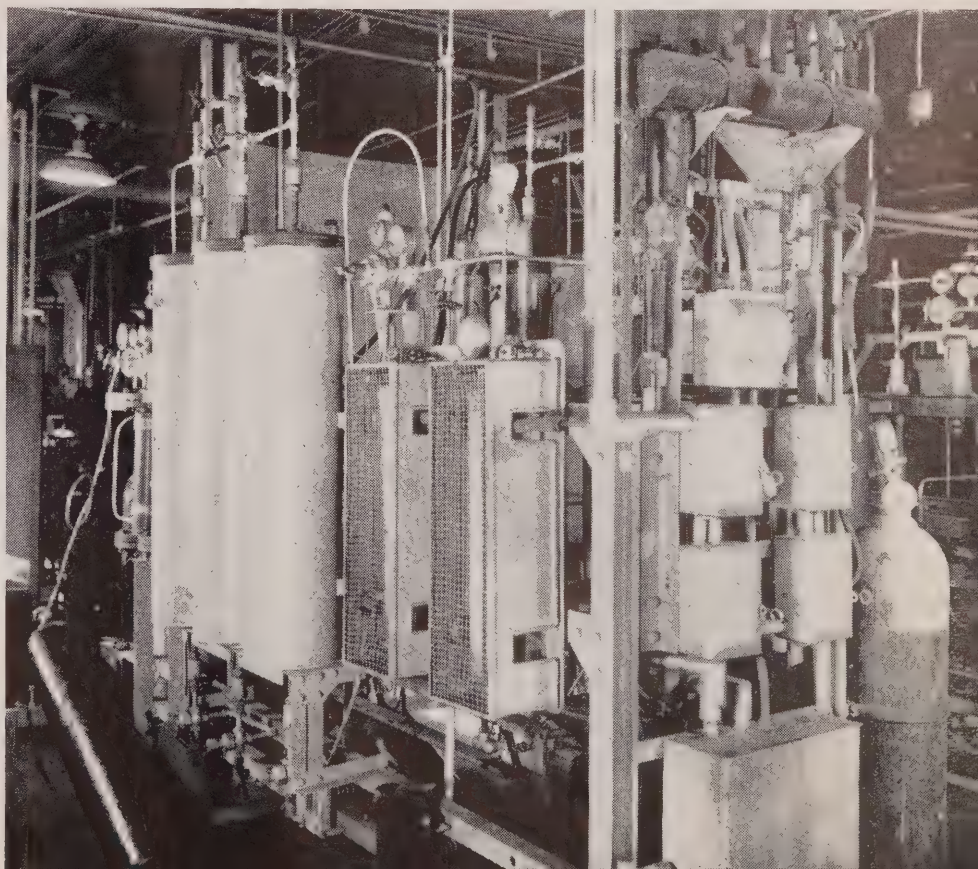
THE ABOVE illustration shows fume control columns and pipes which are made of pottery and are utilized to dissipate injurious vapours through the use of a neutralizing agent which destroys the acids completely and permits their safe disposal by a powerful exhaust fan.



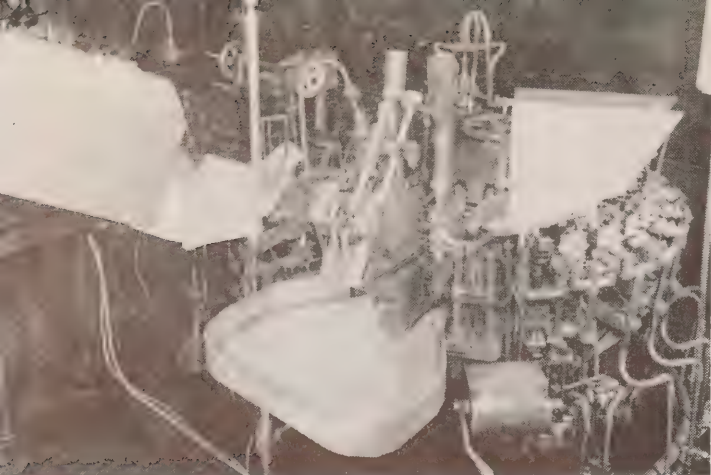
IN THIS shot the young lady is shown welding filament coils to the lead wires. This modern electrical process eliminates the difficulties experienced with ordinary clamping methods.



THIS PICTURE shows filament coil being examined under a powerful microscope, and any imperfections are discarded. A delicate balance, capable of recording the weight of an ordinary pencil mark on a piece of paper one inch square, is also used to check the weight of the filament coil.



THESE ARE gas purifying furnaces used in the manufacture of Hydro lamps of 40 watts and up, where 99.98 per cent pure argon gas is taken from the cylinders and passed through these purifying furnaces until it is entirely free from moisture or impurities.



THIS ILLUSTRATION shows an automatic stem assembly machine which places the two glass parts (flare and arbor) in position and then inserts the two lead wires, fuses them to the glass parts, welds and presses them together, and finally seals the lead wires in their related positions.

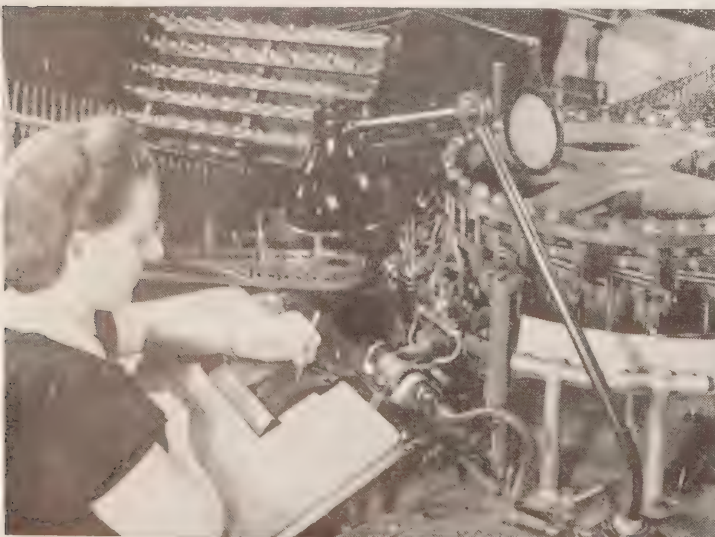


WHEN ALL processed lamp parts have been combined into one assembly, they are conveyed to the scalex machine, shown above. The mount is automatically inserted and hermetically sealed in the glass bulb. Following this operation, the mechanism exhausts the air, flushes the bulb several times with nitrogen gas, and fills the lamps with 99.98 per cent pure argon gas.

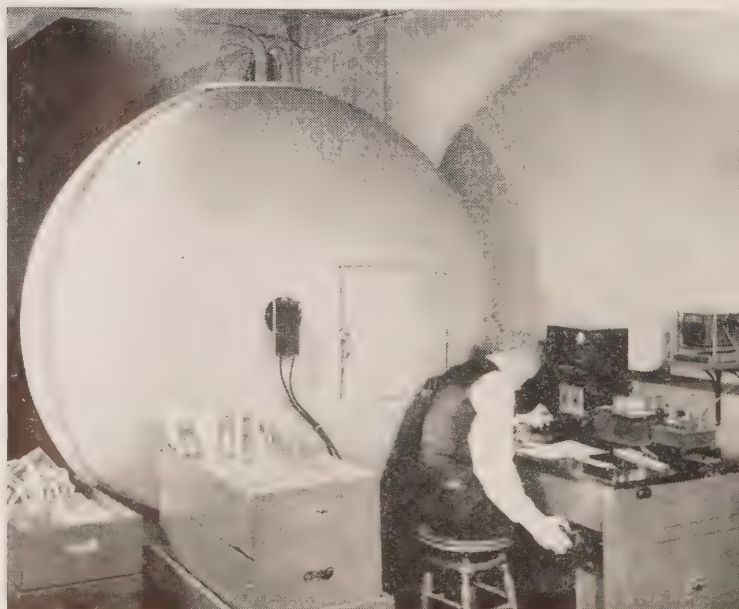


THE YOUNG lady on the right is shown operating the basing machine, which affixes the metal base, containing a measured amount of special cement, to the finished bulb. This machine also solders the lead-in wires to the contact points—one at the top centre of the base and the other to its side. The girl on the left is packaging the completed lamps.

THIS IS what a mounting machine (below) looks like. It shapes, cuts and inserts the very fine anchor wires which hold the filament, picks up and inserts the filament coil and clamps each of its ends to the lead wires. This modern equipment is capable of producing 1,500 mounts or finished stems an hour.



HYDRO LAMP specifications call for some 480 individual examinations and tests, and the picture below shows an integrating sphere used for testing light intensity.



Renfrew and Almonte Now in Hydro Family

WITH the recent signing of contracts by Renfrew and Almonte, all the larger municipalities in the Ottawa Valley, with the exception of Pembroke, are now included in the Hydro family.

The contract for Renfrew was signed by mayor J. R. Barry and R. C. Kennedy, the town clerk, on October 17, 1944, and Hydro service was introduced on December 1. In Almonte the signatories were mayor W. E. Scott, and the town clerk, R. Jamieson. The contract between Almonte and the Commission was entered into on September 26, 1944, but owing to certain difficulties, Hydro power was not available until January 21 of this year.

Both contracts provide for the creation of local commissions for distribution and administration purposes. In Renfrew the new body will be known as the Renfrew Hydro-Electric Commission, while in Almonte authority will be vested in the Almonte Public Utilities Commission. Previously, in Renfrew, electric service was under the supervision of the town council. In Almonte a public utilities commission had been already established.

In entering into its new arrangements with the town of Renfrew, the Commission might be said to be amplifying an old inheritance.

More than a quarter of a century ago, about the start of the First World War, M. J. O'Brien, the well-known mining magnate, was interested in certain industries in the town of Renfrew. These included the Renfrew Machinery Company, the Renfrew Woollen Mills, and the Renfrew Scale Factory. Industry at that time, as in the present global conflict, was enlisted for war. To make his factories in Renfrew independent of possible fluctuations in loads, Mr. O'Brien decided to construct a generating station of his own, and a suitable site on the Madawaska river near Calabogie was chosen.

He apparently became keenly interested in hydro power development for he undertook projects far beyond the scale of his original plans. There was further construction on the Madawaska, and some little time later the purchase of the Galetta Power Company's station on the Mississippi river near Arnprior was negotiated. Transmission lines were built and several towns in the Ottawa Valley were linked into the O'Brien system.

Mr. O'Brien not only supplied power to his two fine farms—one at Calabogie, and one near Renfrew—but also built transmission lines to a number of rural communities.

The Ottawa river is fed by many tributaries having their sources on the Ontario side of the inter-provincial boundary. In addition to the Madawaska, these include the Bonnechere and the Mississippi, which have some excellent power development sites. By the purchase of the O'Brien system in 1929, The Hydro-Electric Power Commission of Ontario came into possession of many of these sites.

Before the agreement with the town of Renfrew, the Commission's stations were supplying a load of about 800 horsepower to certain industries in the town, including the Renfrew Machinery Company, the Renfrew Woollen Mills, the Renfrew Electric Company, and the Light Alloys Lim-

FIELD APPOINTMENTS ANNOUNCED BY HYDRO

RECENT changes in the operating department of The Hydro-Electric Power Commission of Ontario have been announced by H. J. Muchleman, operating engineer, as follows:

Leonard G. Dandeno has been appointed superintendent, Eastern Ontario division of the Southern Ontario system, as successor of the late G. B. Smith. Mr. Dandeno, who is a graduate of the University of Toronto, 1916, and a member of the A.I.E.E., and the Association of Professional Engineers of the Province of Ontario, joined the Commission 28 years ago as meter and relay engineer. He has been superintendent of the Thunder Bay system since 1923.



Leonard G. Dandeno

J. Walter Looney has been named superintendent, Thunder Bay system, succeeding Mr. Dandeno. Mr. Looney, who graduated from the University of Toronto in 1930, is a member of the A.I.E.E., and of the Association of Professional Engineers of the Province of Ontario. He came to the Commission 15 years ago as meter and relay engineer. He was superintendent of the Patricia district from 1935 until 1941, when he became superintendent of the Chats Falls development.



Lawrence H. Baxter has been appointed superintendent at Chats Falls, as successor to Mr. Looney. Mr. Baxter is a graduate of the University of Toronto, 1924, a member of the A.I.E.E., and of the Association of Professional Engineers of the Province of Ontario. He joined the Commission 22 years ago as meter and relay engineer, and has been supervising meter and relay engineer of the Toronto district since 1928.




L. H. Baxter

ited. In the district outside the town the Commission has also been very active. The very important plant of the Dominion Magnesium Company, near the village of Cobden, has been supplied with Hydro power for the past three years. In this case the load is approximately 10,000 horsepower.

In the case of Almonte the Commission is a new-comer, but there are three stations established on the Mississippi, located at High Falls, Carleton Place and Galetta, and some of the power from these plants may be diverted to Almonte to meet the deficiency caused through lack of water at the town's power plant on the same river.

The decision made by Renfrew and Almonte to join the Hydro family has been hailed as another important chapter in the history of these progressive towns.

EMPIRE of the NORTH



IT WOULD be difficult to forget the rugged grandeur of Ontario's great North which invites holiday maker, hunter, prospector—in fact everybody—to new experiences and high adventure. This illustration will bring back memories to those who have been in this amazing country.

THIS is the second in the interesting series of articles by Mr. James who writes from first hand knowledge of the North Country.
—The Editor.

By **T. C. JAMES,**

H.E.P.C. Municipal System Engineer

LADY LUCK, that fickle goddess of chance, whose vagaries are sometimes apparent in the discovery of mining properties, has also played a part in the opening of Ontario's great northland for industrial activity.

The story of the discovery of the nickel ore deposits in the Sudbury district is just as romantic as that of the discovery of silver in the Cobalt district some twenty years later. It is most significant that chance circumstances should have played such an important part in locating a product that would eventually result in revolutionizing the production of mechanical equipment and establishing one of the greatest accomplishments ever achieved in the realm of metallurgy.

The discovery of nickel ore deposits at the Murray mine, after the Canadian Pacific Railway had been placed in operation in this district in 1883, first established the importance of an enormous territory, which previously had



T. C. James

been considered only a vast area of muskeg, rock and virgin forest.

Noted Mineralized Rock

Sir Thomas Tait is reported to have been one of the first to sample a nickel ore body in the Sudbury district. In the spring of 1883, Sir Thomas, who was then secretary to Sir William Van Horne, noticed some mineralized rock in a cutting on the grade a little beyond the "end of steel." Putting some samples of it in his pocket he brought it back to his private car in which the president of the C.P.R. rode on his inspection trips, and later, S. J. Ritchie, of Akron, Ohio, took the samples and had them analyzed. Finding them fairly high in copper content, he staked out claims near where the samples had been found. It was later discovered that this so called copper ore was high in nickel content but it was found very difficult to extract the nickel from the copper. Experts from the Orford Copper Company, to whom Mr. Ritchie had sold the copper ore, devised a means of extracting the nickel, a method which is said to be followed to this day.

Originally this rich nickel copper ore was only considered for its copper value and mine owners and operators

were quite unimpressed by its nickel content. For some time after Sudbury nickel ore was being successfully mined, great difficulty was experienced in separating the copper from the nickel in ore treatments, and when this problem was finally solved by extensive research, the enormous possibilities of nickel were finally realized, especially with respect to nickel steels.

During the first world war there was an enormous demand for nickel and the Canadian mines in the Sudbury district were extended to the limit of their resources to provide sufficient quantities for Allied armaments.

After the close of the Great War it was again necessary to develop markets for nickel. Extensive research work eventually developed nickel steels to the point where, at the present time, almost every type of machine used in industry, almost every type of steel product being manufactured, and almost all equipment utilized in trans-



THESE ARE the kind of things one may expect to see around Timmins or, for that matter, in other Northern Ontario mining areas. It's a shafthead of a gold mine.

portation services, are dependent upon the use of nickel in some form or other to meet the specifications of modern design now called for by engineers.

Used In Boulder Dam

Nickel of Northern Ontario origin, can be found in the water gates at Boulder Dam, the galley and engine-rooms of ocean liners, the exterior trim of the Empire State Building, traffic markers in London streets, and the filter screens of Cuban sugar mills. When it is considered that a small area in Northern Ontario produces ninety per cent of the world's nickel and that the Canadian market consumes less than a half of one per cent of that production, the magnitude of the Sudbury district nickel products in international trade can be readily understood.

The construction of the Temiskaming and Northern Ontario Railway in 1903 resulted in the discovery and development of the great silver and cobalt ore deposits in the district between North Bay and Kirkland Lake.

The story which has grown up around the discovery of the Larose mine is reminiscent of the Tales of the

Arabian Nights. The story is told of a blacksmith named Larose who threw his hammer at a fox which was passing the open door of his forge. The hammer missed the fox but struck a rock which proved to be a nugget of silver.

The first discovery of silver in the Cobalt district, however, is attributed to J. H. McKinley and Ernest Darragh. These two men noticed the peculiar colour and



ONE OF the largest gold mines in Canada is the Hollinger property which is reported to have been in operation for over 30 years. The illustration, above, shows an interesting view of this mine.

weight of some pieces of rock at a location where blasting operations were going on. Their discovery resulted in the establishment of the McKinley-Darragh mine, one of the first operating properties in the district and one of the richest in production.

Gold mining in Northern Ontario has proved to be of a more permanent nature than silver mining. While many mines have been forced to close down due to the exhaustion of ore bodies, most of the important gold mines have been operating for years.

Gold Mining

Gold mining operations were insignificant until after the Temiskaming and Northern Ontario Railway was placed



ANOTHER FAMILIAR name in Canadian gold mining circles is that of Lake Shore Mines Limited at Kirkland Lake. This property is shown above.

in operation in 1905. In 1920, fourteen mines were operating, and production in that year was valued at over \$13,000,000. By 1930, twenty-one operating mines were in production and, in that year, gold produced in Northern Ontario was valued at \$35,500,000. Ten years later there

were seventy mines operating and the gold output was valued at \$122,000,000.

This expansion in the gold mining industry has been entirely due to an abundance of low-cost power made available through the medium of The Hydro-Electric Power Commission, whose initial services were inaugurated in 1929. Prior to that date, the only existing gold mines in Northern Ontario were located in the Porcupine and Kirkland Lake sections of the territorial districts of Cochrane and Temiskaming. The only source of power supply at that time were the generating plants and transmission lines of the Canada Northern Power Corporation, which were rapidly reaching the limits of their available installed capacities.

The power requirements of the nickel mining industry were provided by developments owned by the International Nickel Company and the Wahnapiatae Power Company, the possible outputs of which were also insufficient to supply the future load growth necessary for meeting the constantly expanding demands of the nickel and copper markets.



IN THE railway car in the foreground is part of a shipment of sintered ore which was en route to furnaces at Sault Ste. Marie when the photo was taken. The sintering plant of the Helen mine at Wawa can be seen in the background.

To secure adequate power sources to meet these conditions, the Commission's efforts were centered upon the construction of new generating plants on the English river at Ear Falls, and on the Albany river at Rat Rapids. With a present installed capacity of 19,250 horsepower, and capable of being enlarged to an ultimate capacity of 26,750 horsepower, these plants opened up entirely new mining territory in the Red Lake, Woman Lake and Pickle Lake mining areas of the Patricia district. This power resulted in the establishment of eleven new gold mines and in extending

the Thunder Bay system transmission lines to open up a second new mining section at Long Lac and Beardmore in the Thunder Bay district to give service to ten new gold mines.

At the same time, Wahnapiatae Power Company's system was purchased and enlarged to provide an additional 10,000 horsepower source of power supply at Crystal Falls on the Sturgeon river in the Sudbury district. The Abitibi Canyon development, with an installed capacity of 264,000 horsepower, was placed in operation to supply the additional power demands of both the nickel and gold mining industries in the Sudbury, Porcupine and Kirkland Lake areas.

The Abitibi plant, since it was first placed in service in 1933, has supplied loads approximating 100,000 horsepower to the nickel mines, and over 50,000 horsepower to the Canada Northern Power Corporation for the load growth of its mining customers in Northern Ontario and Quebec, as well as some 38,000 horsepower to twenty-seven new gold mines served directly by the Commission.

The Commission's initial power supply in the Northern Ontario field of operations was inaugurated at greatly reduced rates over those prevailing prior to 1929, and in the near future, it is expected that further rate reductions will be authorized for all gold mining customers. Lastly, the Commission has further extended its field of operations in the Northern Ontario area by the purchase of the Northern Ontario Power Company's system (described in the January issue of *Hydro News*), thereby increasing its power resources in the northern districts by 66,840 horsepower of installed generating plant capacity.

Little is known of the most northerly portion of the Patricia district which was annexed to the province in 1912. It contains some 146,000 square miles of territory, and is gradually being opened up for mining development. The Berens River Gold Mines is now being operated, and several other good prospects are being investigated.

Affected By War

The gold mining industry has of course been seriously affected by the war. Scarcity of labour and equipment has curtailed production especially during the past three years. There is every indication, however, that as soon as the war is over and adequate labour and materials again become available, an enormous expansion in gold mining operations will take place. Even during the war period, exploration and prospecting were under way throughout Northern Ontario, and from reports now coming in, many new mining properties will begin operations and many properties now operating are expected to increase their output. This prospect will not only provide jobs for men returning from the armed forces, but will also give Canada greatly increased gold production, and thereby strengthen her economic position among the nations of the world.

Although iron ore deposits have been found in several different portions of Northern Ontario, the only successful mines up to 1942, were those in the Michipicoten area, known as the Algoma Ore Properties, and now being operated by the Algoma Steel Company of Sault Ste. Marie.

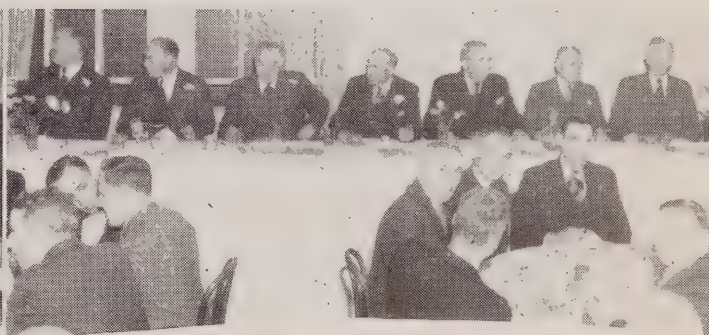
Possibly the most important discovery of iron ore on the North American continent, however, has recently been made in the Rainy River district at Steep Rock Lake, approximately 85 miles north-east of Fort Frances and 50

(Continued on page 27)

They Stayed for Dinner!



SEATED AT this section of the head table, from left to right, are: W. Ross Strike, H.E.P.C. commissioner; Major Peter Ashton of Great Britain, the speaker of the evening; David Forgan, chairman of the proceedings; and Hon. George H. Challies, vice-chairman of the H.E.P.C.



MOVING ALONG the table, the photographer got this group, comprising, from left to right: Mr. Challies, John Dibblee, Dr. Otto Holden, T. U. Fairlie, Wills MacLachlan, A. H. Hull, W. P. Dobson and H. J. Muchleman.

Construction Department Event Becomes "Full-Fledged Hydro Party" — Commissioners Challies And Strike Acclaim Service Of Men In "Hydro's Front Line"

HUSKY, hearty men of "Hydro's front line," men who know Nature in all her moods and who do the job of putting the harness on horsepower, took over the Crystal Ballroom of the King Edward Hotel, Toronto, on January 3.

Some were slim and wiry, and others were big and brawny, and their laughter was the kind that starts at the belt-line. At times, they blended their voices—some stentorian and off key—in rousing, old songs while the great crystal electroliers overhead seemed to sway in rhythm.

As he looked over the 300 present at this 14th annual dinner of the H.E.P.C. construction department, David Forgan, construction engineer, noted that representatives of practically every other department in the Commission were mingling with "our gang." "This occasion," he observed, "has developed into a full-fledged Hydro party."

These dinners, he went on, had been inaugurated as a construction department event "to enable us to meet old friends." Today, it afforded an opportunity for men in the field to become acquainted with Commission personnel in many departments.

During the evening there were presentations, entertainment, tributes from Hon. George H. Challies and W. Ross Strike, members of the Commission; and from the heads of many departments and a graphic description of the D-

(Continued on page 16)



IN CASE any of the guests may have been trying to visualize how the gathering looked from the balcony of the Crystal Ballroom, this illustration will provide the answer.



ANOTHER SECTION of the head table was occupied by this group, comprising, from left to right: R. T. Jeffery, M. J. McHenry, Alex. McPherson, Osborne Mitchell, R. L. Hearn, W. E. P. Duncan, general superintendent of the T.T.C., a special guest; W. Ross Strike and Major Peter Ashton.



AMONG THOSE caught in the camera viewfinder here are: W. Ainsworth, Cecil Ramey, G. Bradshaw, W. J. Gilson, C. McPherson, C. Morden, S. Hanchuch and H. H. Leeming.



TOO BAD that this one couldn't have been reproduced as a sound picture! These two gentlemen were blending their voices in a rousing crescendo at the time. It wasn't an operatic aria—just an old song—but John Dibblee (left) and Dr. Otto Holden proved they could, in a literal sense, “rise” to the occasion when called upon.



HERE HON. George H. Challies, vice-chairman of the H.E.P.C., extends a warm handclasp to G. C. Thomas of the construction department after presenting him with a handsome travelling bag—a gift from his friends to mark the completion of 30 years' service with the Commission.



INCLUDED AMONG this group of interested guests are: S. L. Fear, H. McNally, H. Self, K. Beam, H. Johnson, E. T. Ireson, W. Hogg and L. Fellman.



HYDRO NEWS identified the following in the above illustration: H. J. Franklin, J. McTavish, D. Vine, G. Emery, F. Lear, C. E. Crease, A. H. Frampton, O. Titus and Bert Allan.

A ROUSING ovation was accorded C. L. (Lou) Manning, (right) a popular cook at Hydro construction camps for many years, when he stepped forward to receive his “savings and retirement” cheque from the hands of Wills Maclachlan.





IT'S QUITE a sizeable spot the Crystal Ballroom as the photographer learned when he glided and pirouetted between the tables. At one end of the room he found this group among whom are A. Pyke, Bill Brant, Evan Knowlton, Fred Irons, T. Gill and D. Linklater.



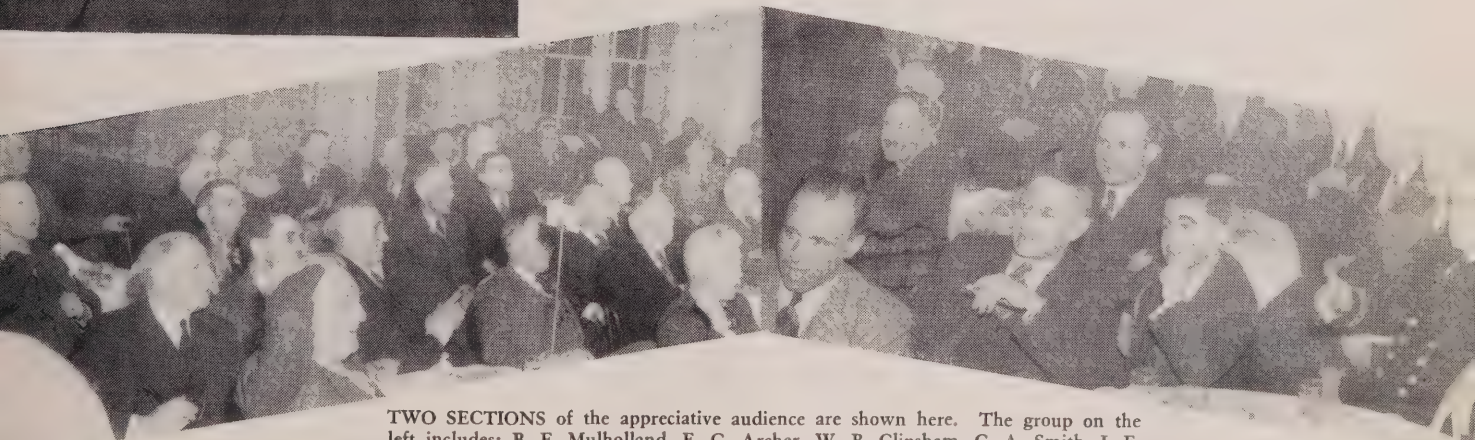
THERE WERE more than tall stories at the construction department's annual dinner this year. There were tall cigars, and Art Sharpe and N. T. Scott (above) were quite big enough themselves to be a match for these out-sized weeds.



AFTER HIS "command performance" at the construction department dinner, Otto Holden (below, left) was asked if he were a doctor of music as well as a doctor of engineering. On this occasion his singing voice had a Cockney accent and the song had a few jaunty "ain'ts." Ted Rust, ventriloquist (right), could probably explain the Doctor's remarkable vocal versatility!



WHILE THESE choristers may have lacked something in the way of true tonal quality and nuance in the rendition of the old songs, they had plenty of volume and enthusiasm. With a large cigar and a serviette clenched in his left hand, "jim" Scott did a fine job as "conductor." Included in the group are: C. Morden, A. H. Sharpe, Barney Weldon, Don Barnes, H. Russell and George Brown.



TWO SECTIONS of the appreciative audience are shown here. The group on the left includes: B. F. Mulholland, E. G. Archer, W. B. Clipsham, C. A. Smith, J. E. Sproule, J. Harkins and G. G. Argo. Among those on the right are: Ed. Higgins, R. McMordie, Lt.-Commander Frank Mason, R.C.N., R. G. Wykes, H. Wagner, D. A. Mitchell, S. A. Perrott, A. Matheson and E. Durie.

THEY STAYED FOR DINNER

(Continued from page 13)

Day landings in France by Major Peter Ashton from Great Britain. As a climax to the evening, a movie showing the actual invasion of the French coast was screened.

In the life of an individual 25 or 35 years seemed a long time but in the life of a nation it was not so long, declared Mr. Challies in his address. In congratulating the construction men "who had served so faithfully at their tasks," he remarked: "There are monuments to their ingenuity from the English river to the Madawaska and from Niagara to the Abitibi Canyon.

"You have made a great contribution to the immense success of the Commission," he continued. "In these days when we have so many half-baked suggestions and theories as to our economic and social set-up, it certainly is gratifying to know there are those in our splendid organization who have given 30 and 35 years of outstanding service."

Construction Men Are "Front Window"

Addressing himself to the construction men, Mr. Strike remarked: "You fellows are in the front line in this business. As our vice-chairman has said, you have set up for yourselves monuments that will endure. I only hope you can create many more developments. You are not only the front line but the front window. You are meeting the public of this province under conditions that sometimes can be made unpleasant. I would ask you, as far as possible, on your construction jobs, to remember that the whole Hydro enterprise is built on the amount of service we give to the people of Ontario, and that we can very easily give Hydro a good name or a bad name in the way we conduct ourselves. I would suggest to you, whenever the occasion arises, if you have to put yourselves out a little that you do it. You can create goodwill amongst the public and, in that way, help us to sell Hydro as the greatest co-operative enterprise we have on this continent."

R. T. Jeffery, chief engineer, municipal department, said that these annual meetings of the construction department had become an institution of the entire Hydro organization, and had done a great deal to create a spirit of friendliness and goodwill.

Dr. Otto Holden, chief hydraulic engineer, said that they had been busy in the office on designs and plans—planning largely for the future. "I am sure," he said, "when the time comes to put these plans before you and to ask you to carry them out that we shall have the same wholehearted and active co-operation from all members of the construction department that we have had in the past."

Co-operation among all departments of the Commission, with each making its contribution to the common interest of Hydro was the keynote of the brief message given by M. J. McHenry, director of sales promotion. "I am sure," he said, "that in succeeding years what we all jointly undertake will be in the best interests of Hydro and of the people of this province."

Describes D-Day Landings

Expressing the belief that such events were effective in fostering good relations and better understanding, H. J. Muehleman conveyed greetings from the operating department, while similar greetings from the electrical engineering department were expressed by A. H. Hull.

An interesting highlight of the evening's programme was the gripping description of the D-Day landings in France. The speaker, Major Peter Ashton, made available through the British Ministry of Information, has taken part in five D-Day operations in the African, Italian and French campaigns as a commando officer.

Major Ashton, in simple but vivid language, described many phases of the planning which had preceded the invasion of France on June 6. He told of the great bombing barrage and described the coast and underwater defences erected by the Nazis, and how Allied engineers had made a passage through these obstacles.

In proposing a vote of thanks to the speaker, John Dibblee, chief engineer, operations, declared that Major Ashton's address had made them conscious of the small part they were playing while "these boys are doing such a terrific job at the front."

There were many happy events on the programme. For instance, there was the presentation of a handsome leather travelling bag to G. C. Thomas of the construction department, who has completed 30 years of service with the Commission. A tribute from his friends at head office and at the Bloor street stores, the presentation was made by Hon. George H. Challies.

Then there were Cecil Ramey and N. T. Scott, field superintendents, who have also completed 30 years' service. These two men now carry handsome watches—tributes from their friends in the field and head office, the presentations having been made by William McKenzie of the construction department.

E. T. Steel, stores foreman at Bloor street, and Goldie Walker, chief clerk, construction department, who have served the Commission for 30 years, were honoured by their friends and are also in a position to tell the right time if called upon. Neither was able to attend the dinner because of illness.

Eddie O'Bright, line foreman, was called to the head table to receive the coveted button and certificate which mark him as a member of the Quarter Century Club.

C. Lewis (Lou) Manning, a popular figure for many years at Hydro construction camps where he acted as cook, received a special ovation when he was presented with a "savings and retirement" cheque. In making the presentation, Wills Maclachlan, head of the employees relations department, paid tribute to the fine service which had been rendered to the Commission by Lou.

In his address, Gordon Mitchell of the construction department, declared that the same spirit of co-operation which existed in Hydro was one that should be fostered among all peoples and nations.



A SATISFYING dinner in a friendly atmosphere can make most folk feel at peace with the world. For example, there was this group among whom Hydro News identified W. Guthrie, R. Gauci, George Champagne, George Paige, F. Tate, S. A. Scott and A. Stephens.



A FEW moments of quiet meditation were being enjoyed by the group shown above when the photographer turned the lens in their direction. Those identified included D. A. McKenzie, F. Scriven, T. Barnett, Gordon Mitchell, C. Hayes, P. Reid and A. L. La Prairie.



WHEN THIS photograph was taken David Forgan was delivering his address of welcome and, as shown by the faces above, had the close attention of his audience. Included in group are: E. F. Carre, R. Lightbody, George Garnett, P. F. Wayman and S. W. Egan.



THESE TWO gentlemen in the foreground, in a very literal sense, have time on their hands—watches presented by their friends in recognition of 30 years' service with Hydro. Their names are Cecil Ramey (left) and N. T. Scott. At the mike is Bill McKenzie who made the presentation.

National Safety Council



This is to Certify that

Operating Department Maintenance Gang of the
Hydro Electric Power Commission of Ontario

has been awarded the President's Medal for the saving of
human life from death by suspension of normal breathing by the
Schaefer, Prone Pressure, Method of Resuscitation.

In Witness Whereof, the President of the National Safety Council by authorization
of the Executive Committee has hereto affixed his signature this 3rd
day of November Nineteen hundred and Forty four.

W. R. Loomis

Secretary

Ned H. Dearborn

President

CITATION

Resuscitation of Arthur Krotts who was overcome by carbon monoxide gas

on May 2, 1944

For MERITORIOUS SAFETY SERVICE

THIS IS a reproduction of the National Safety Council medal
and certificate awarded to the operating department line main-
tenance gang who saved the life of Arthur Krotts last year.



TWO awards of the National Safety Council were made
to Hydro men at a recent meeting of the Niagara Dis-
trict Electric Club in the Royal Connaught Hotel in
Hamilton on Wednesday, January 10.

William Johnston of Hamilton was the recipient of one
medal for his action in saving the life of a girl at Lake
Simcoe, while J. S. Lotimer, Niagara Division operating en-
gineer, received the medal on behalf of the operating line
maintenance gang who saved the life of Arthur Krotts, who
had been overcome by carbon-monoxide gas.

The citation on the certificate awarded William John-
ston reveals that on August 2, 1944, while boating near Hol-
born Beach at Lake Simcoe, he noticed Miss Elsie Simon in
difficulty in the water.

Diving into 6 to 8 feet of water he brought her to his
boat. Without waiting for the craft to reach shore, he
placed her on the deck and commenced resuscitation. He
continued for six or seven minutes while other passengers
in the craft brought it to shore. There, he was relieved by

the Sutton West rural Hydro gang. After more than two
hours, the girl was able to breath again and was removed
to her home and placed under medical care.

The citation on each of the certificates awarded J. O.
McDermott, S. L. Goodbrand, H. R. Middleton and J. M.
Johnston, relates that on May 2, 1944, the H.E.P.C. station
at Dundas received a call that a man had been overcome by
carbon-monoxide gas at the farm of Richard Biggs, West
Flamboro Township, near Dundas, five miles away. The
four members of the crew rushed to the scene and found that
fellow-workmen had raised the victim, Arthur Krotts, from
a well. The man was unconscious and wasn't breathing.
The Hydro men, who had all been trained in first aid, im-
mediately applied artificial respiration and, after working
over the unconscious man for about a half an hour, he began
to breathe.

Wills Maclachlan, member of the medal administrative
committee of the National Safety Council, presented the
medals at one of the largest gatherings held by the Niagara
District Electric Club.



WILLS MACLACHLAN congratulates William Johnston of Hamilton, the recipient of a National Safety Council award for having saved a life last summer.



IN THIS group (right) are the members of the operating line maintenance gang at Dundas who received an award. They are J. O. McDermott, S. L. Goodbrand, H. R. Middleton and J. M. Johnston.

"The President's Medal" is awarded by the National Safety Council as a fitting recognition for those who successfully resuscitate by the Schaefer Prone Pressure Method. It is given in cases of electrical shock, gas asphyxiation, drowning or other accidental causes of suspended respiration.

The symbolic design on the face of the medal has its origin in Greek Mythology. The three Goddesses of fate, Clotho who spins the thread of life; Lachesis, who determines its length, and Atropos who cuts the thread of life, work under the watchful scrutiny of a figure symbolic of safety. The following lines briefly interpret the symbolism of the three Goddesses of fate:

"Spin, Clotho, spin
Lachesis measure
Atropos sever
Forever and ever."

The figure of Safety stays the hand that would cut the thread of life.

S. L. LOTIMER, Niagara Division operating engineer, who received the award on behalf of the gang, is shown with Mr. MacLachlan who made the presentation.



HARNESSING HORSEPOWER



DAM CONSTRUCTION on a river. In the background is seen a completed section of the dam; in the foreground is the cofferdam for the second section.

CONSTRUCTION PLANNING

By Gordon Mitchell

Assistant Engineer, H.E.P.C.

MANY areas in the northerly part of Ontario are rich in timber and mineral resources but poor in arable lands. The building-up of a prosperous community life in these districts depends upon industrial activity. Industry, for its successful operation, must be supplied with power on an economical basis. One of the chief functions of Hydro is to meet this demand by constant new development, as well as by the continual expansion of the services afforded through already established power stations.



Gordon Mitchell

The feasibility of new power developments has first to be considered in the light of the results of various kinds of exploration, and ground and aerial surveys. If the finding proves satisfactory, a construction project is drawn up.

Before the actual construction of the power-generating plant can be proceeded with, many preliminaries must be attended to. Drawings and blueprints of the structures and installations are prepared. The type of equipment and machinery most suitable and economical for the particular job is decided upon. The time it will take to complete construction is estimated. The cost is figured out for both material and payroll. Finally, the key men are appointed for the various construction tasks.

Key Men Selected

The man placed in charge of the entire job is known as the field superintendent of construction. Usually the post falls to an engineer on the Commission's staff. If through press of work elsewhere, a sufficiently competent

and experienced staff man is not available for the new project, somebody with the necessary qualifications must be enlisted from outside. Following this appointment, a foreman and certain key men are selected to get the job under way.

After a few days discussion at head office, the superintendent of construction, accompanied by construction, hydraulic and electrical engineers, leaves for the site of the new development, often by plane. On arrival, the party surveys the area, noting the locations for the various works and structures. Tentative sites are then chosen for the temporary and permanent camps and also for the work shops, mixer and crusher plants, compressors, etc.

The construction department now draws up a revised time schedule, showing the approximate starting and finishing dates for each phase of the work. On this basis, a chart is prepared, which itemizes the work to be done on each particular job and the number of men who will be required to complete it on schedule.

On jobs where large excavations of a varied character must be undertaken, another chart is also prepared, embodying a list of the excavation projects and the estimated time needed to complete them. This chart also details the necessary equipment to be employed.

Excavation is a job of primary importance. In planning it, a chart is prepared embodying a list of the excavation projects, the time that will be required to complete them, and the equipment to be employed in each case.

In earth excavations the material is usually removed by shovels, loading into large-size trucks or wagons. It is frequently convenient to continue operations from ground higher than the bottom of the excavation. In this case drag lines are employed. These are machines which are operated by a mechanism similar to that of the shovel, but the bucket is loaded by being dragged or hauled towards the material that has to be removed.

In rock excavations, compressors are set up to provide the air for the operation of the drills. Holes are drilled

to a convenient depth and filled with charges of dynamite. After blasting, the shovels get to work. These are machines similar to those seen every day working on foundation excavations in the city.

Sometimes it is necessary to excavate rock lying under water. For this purpose the drills are mounted on scows. Where a layer of earth lies over the rock, a casing is installed down to the rock surface before drilling. The blasting of submerged rock is a spectacular sight, as great fountains of water and spray are hurled high in the air. Dipper dredges are usually employed for cleaning-up operations.

The next step is to get the working crews and equipment on the ground.

In the southern part of the province, where good roads and railways are readily available, few transportation difficulties are encountered. In parts of Northern Ontario, however, it is quite a different matter. Here Nature still seems to preserve her primeval instinct for isolation and sets up many barriers against man's aggression. Sometimes waterways may solve the problem of transport from rail-

head. Sometimes roads have to be hewn through miles of virgin forest. On one well-remembered occasion it was necessary to construct a snow road for fifty miles through the bush as it was impossible to get the material and equipment through to the site in summertime except by air.

In addition to roads, power transmission lines have often to be built. These are carried through from some established station to the new site to provide power for the mechanical equipment employed on construction. On the new projects in Northern Ontario, however, power is developed on location for this purpose. On most of the jobs, of course, wherever situated, most of the excavation equipment is self-powered.

When a road has to be cut through the bush to gain access to the site from the railhead, the equipment for the temporary camp, which must be set up while more permanent buildings are being constructed, is frequently flown in by plane. Generally one truck is sufficient to transport any supplies that may be required by the gangs on their way in over the trail. In summer the bush is alive with black flies and mosquitoes, but these annoyances are nothing



POWERFUL BULLDOZERS can do quite an efficient job in changing the landscape! Here, one of these steel-jawed shovels is seen in action on a site for a power plant.

compared with those which would be encountered on a similar job in the tropics, and the healthful, invigorating air of Northern Ontario compensates for all minor hardships.

Camp Site Selected

On the power developments undertaken by the Commission, anywhere from a hundred to thousands of men may be employed according to the size of the job. They have to be housed, fed and looked after in much the same way as an army frontier outpost . . . although, of course, they will not face the same battle risks unless Herr Hitler, before he is finished off, should produce a super stratospheric robot bomb. Before the men arrive on the scene the camp site has been selected, with particular attention directed to the water supply, the drainage and the sewage disposal.

Construction work on a big power project entails, not only the actual erection of the structures necessary for a generating station, but also the solution of the many problems associated with a more or less difficult terrain. Comfortable accommodation, therefore, has to be provided for all the men employed on the job.

The buildings erected on a construction job are designed with the view to keeping the different crews close to their work and providing comfortable quarters and recreational facilities. The dormitory bunk-house is usually a U-shaped structure, the sides providing the sleeping quarters and the base the wash rooms and toilets. The double-deck beds are comfortably spaced, and a living-room is located at the end of one wing. In the camps of Northern Ontario, stoves are generally used for heating. Where the size and duration of the job has warranted their substitution, projection steam heaters have proved satisfactory and economical. There is, of course, running hot and cold water in all bunk-houses.

Dining halls and kitchens are designed so that all the men employed on a construction job can be fed at one sitting. Kitchens are as up-to-date in their equipment as those of any first-class cafeteria or city hotel. There are refrigerators for meats and perishable foods, and store houses for groceries and canned goods. In order that the men may always be provided with fresh vegetables, root houses are built for their storage over periods such as the spring break-up and the fall freezing when it is often difficult to send in new supplies.

On all the big jobs, comfortably furnished halls provide recreational and educational facilities. There are Frontier College courses for the studios, table tennis for those whose vigour is undiminished by the day's work, and a well-stocked library of books and magazines for those more quietly inclined. Motion pictures are shown from time to time and provide both instruction and entertainment. There are cosy corners for the bridge enthusiasts and the poker players. And, altogether, an interesting time awaits everybody during leisure hours.

Water and sewer lines serve all buildings where required. Water is usually supplied from the river where the development is taking place. Pumps are installed upstream from the job. They are of a capacity to handle, not only the needs of the camp, but also the requirements of the concrete mixing plant and the compressors. The drinking water is, of course, always chlorinated, and a septic tank with disposal bed takes the total sewage disposal from the

camp—with the exception of the greasy kitchen water, which is separately discharged into a leaching well.

On large scale construction jobs a doctor is always in attendance. In all cases, first aid and hospitalization are provided for, and a physician can, of course, be secured on short notice.

Fire protection is looked after by standpipes which are located so as to place every building within easy reach of the fire hose. As an additional precaution, buildings are spaced at least fifty feet apart.

Construction of Cofferdams

As the foundations of the power house, itself, and possibly other structures, will be below the existing water levels, dewatering of the areas involved must be undertaken before actual construction can be proceeded with. This is accomplished by means of cofferdams—structures built to exclude water from an excavation so that work may be done in the dry.

A typical cofferdam for power house excavation purposes is built of rock-filled timber cribs sheeted on the outside. It is placed at such a distance from shore as to allow all excavations to be done on dry land after the shut-off area has been pumped out.

On certain excavation jobs it sometimes suits conditions to utilize the natural bank of earth or rock along the shore line. Behind this protection the work is carried out, and when the area is flooded after the completion of the structures, the bank may be removed from under water.

When the permanent dam, which will contain and maintain the head of water for power purposes, has to be built across a river, some method has to be devised to handle the flow of the stream while construction is in progress. Each particular site suggests its own best and most economical arrangements.

One practice is to project cofferdams from the shores to embrace the areas which must be dewatered while the dam is being built. First of all, a cofferdam in the shape of a three-sided figure, making with the shore line a rough square or rectangle, is built out from one side of the river. When the area thus contained has been dewatered, a section of the dam is constructed. The cofferdam is then removed, a similar crib-work is projected from the other side of the river, and under its protection the remaining section of the dam is completed in the dry. Openings, of course, have been left in the first section of the dam to provide for the diversion of the river flow while the second section is under construction. When the whole work is completed, these openings are closed by gates or stop-logs and filled up behind with concrete.

In another situation the problem of dam construction may be solved by the diversion of the entire river through a concrete conduit built along the shore. Cofferdams are built to effect this diversion which permits of the whole site of the dam being dewatered at one time. After the dam is completed, the conduit is closed off by gates and filled behind with concrete. In the case of a low river flow, an open flume may answer the purpose of a conduit.

Still another method of handling river flow is by the excavation of a tunnel in the river bank. Into this tunnel the stream is diverted. When the dam is completed, the

tunnel entrance is closed by gates, and a short section behind is filled with concrete.

The method of dam construction to be adopted in any particular case involves a study both of river flows and economic questions.

For the carrying out of all this construction work, as well as for the actual building of the permanent power



TEMPORARY WINTER camp on a power development site is shown in this reproduction.

house structures, large quantities of concrete are always required. If the Commission's laboratory approves both the sand and gravel in a pit close to the site of the work, a sand-and-gravel screening and crushing plant of sufficient capacity to keep up with the concrete schedule will be set up. If only the sand meets the requirements, then a crushing and screening plant to handle rock from excavated areas, or from a previously located quarry will be designed. This equipment consists of primary crushers, capable of handling large-size rock; screens to separate the material, after these secondary crushers to further reduce the product of the primary crushers; screens to separate the material, after these operations into various sizes and to remove the fine dust and screenings; and conveyors to move the products from crushers to screens—to stock piles—to mixers.

Concrete Mixer Plant

The design of the mixer plant has been largely standardized. All material for concrete is fed by gravity to the mixers. At the top of the plant are bins for sand, crushed gravel or stone and cement—if in bulk. The bins for sand and stone are loaded by truck, belt conveyor or derrick, depending upon the nature of the ground. The bins



A TYPICAL H.E.P.C. construction camp is shown in this illustration.

for bulk cement are fed either by blowing the cement through pipe lines by compressed air or by bucket conveyor or truck. Below the bins are the batchers where all materials are weighed, including the water, and below that again are the mixers. Cement contained in bags is usually stored just above the mixers.

There are many ways in which concrete can be transported to the forms. Buggies, trucks, conveyor belts, cars operated on tracks, buckets handled by derrick, crane or cableway—these are all commonly employed. Then there are the pumpcrete machines, which force the concrete through pipe lines. One or other of these methods of handling is utilized according to conditions.

Large supplies of lumber and timber are required on all developments for concrete forms, crib-work, and many other construction purposes. On some projects wood has to be brought in to the site of the work. In Northern Ontario there are generally plenty of saw-logs available as a result of the various clearing operations. Here it is usually economical to set up a mill right on the job.

As the work of construction proceeds, the activity of the auxiliary services will be stepped up and will become highly important. A welding and blacksmith shop is designed to handle repairs on heavy equipment and also to fashion



THIS PHOTOGRAPH was taken at a Hydro construction camp in the bush and shows how logs are transported from one point to another during the winter months.

concrete hoppers, chutes, etc. There will be a machine shop, a truck and tractor repair shop, a carpenter shop and a general warehouse.

There will be one building in the camp placed rather aloof from its fellows. It is not the place where the cook keeps his pet skunks—no such creatures would be tolerated in a Hydro camp. It is just the shop where the rock drills are sharpened. On a big job there is often a whole battery of sharpeners at work as the steel drills are constantly needing attention. If he approach too near, the strident noise they make is enough to give any casual visitor the "jitters." Even the men working on the construction job prefer to listen in at a distance.

There are bound to be musical instruments and many good voices among a crowd of men engaged on a construction job. Before recreational facilities are established and while the men are still in a temporary camp, there will be many little impromptu concerts in the evenings around the tents until the long summer twilight fades and the stars shine like jewels in the northern sky.



Hydro HOME FORUM

by *Edithemma Muir*
HOME ECONOMIST

A GOOD heart's worth gold." Many a Valentine card will carry this greeting on February 14th. In fact, there's a lot of truth in these words; so let's talk about the heart.

To get the right kind of tune out of this vital organ it is necessary to be practical, or plebeian, if you like, and consider the food we eat. After all, the heart is merely a highly-specialized muscle—a pumping system for the blood—and is governed more by chemical and physical agents than by emotions.

Actually, we think it is just as romantic, and in many ways more interesting, that certain food constituents, each of which has a part to play, materially influence the condition and action of the heart. **FOR EXAMPLE, ONE OF THE PROPERTIES OF CALCIUM DEFINITELY INFLUENCES THE ACTION OF THE HEART.** A diet persistently low in calcium results in lack of normal "tone" in the heart and other muscles. It may also be the cause of soreness of muscles, excessive bleeding, nervousness and lowered resistance. (During the growing period, teeth and bones suffer, too, from menus that contain low-calcium foods.)

There's a simple way to assure an adequate supply of calcium that helps build sturdy-hearted folk. For adults, it means a pint (two cups) of milk each day; for children, a quart. Drink it, or use it in soup, desserts, sauces and so on, but take it every day. Skim milk may be substituted for whole milk in the interest of economy, although it is not altogether wise during butter rationing days because the diet

would be short of Vitamin A. Cheese is just as efficient as milk—one inch cube may be considered the equivalent of a glass of milk. High also in this important food factor are cauliflower, dried beans, broccoli, turnip greens, egg yolk, molasses and oysters.

The use of calcium is stimulated by foods rich in Vitamin D. That is the reason why we also encourage the day's requirement of fish oils, fish or irradiated foods in winter menus. We can all afford some of these foods in one form or another; none of us can afford to do without all of them.

If you want to reheat muffins put them in a paper bag and twist the top tightly; put in a preheated electric oven at 300 deg., turn off the heat and let them warm through. Very dry ones may be moistened by putting a few slices of raw potato in the bag and leaving the bottom element turned on.

It's not necessary to boil fresh maple syrup before you bottle it, but, it should be put in sterilized jars and sealed, with the rubber band being dipped in hot water. Jars should be stored in a dark, cool place.

Try making candy with shortening instead of butter. We made some for a bazaar and it sold like hot cakes. A fudge recipe and maple flavouring were used.

Bake foods in individual baking dishes. The food will cook more quickly.

Shredded spinach is a more economical salad base than lettuce these days. Mix with grated turnip and diced apple and salad dressing.

Soap allowed to dry out will last longer.

After our supply of chili sauce was exhausted, we opened a couple of tins of tomatoes, drained off the juice, added minced onion, celery and a few spices, then simmered 'em for ¾ hour.

Here's a special onion dish that keeps the aroma to itself. Peel onions, keeping them as even for size as possible. Pierce each one right through the centre to keep the heart from popping out. (We use a darning needle.) Place onions in a casserole and pour a tin of mushroom soup over them. Cover and bake in electric oven at 350 deg. for 40 minutes.

Keep slivers of raw carrots in a covered jar in the refrigerator for those who go looking for something to eat at all hours. Crisp, crunchy carrot sticks are easy to prepare—thank goodness, because they disappear more quickly than cookies.

Peel a ring around the small scrubbed potatoes and boil them. They're more nutritious and easy to skin.

Do not attach a percolator, toaster or other electrical appliances and trail the cord where there is danger of someone tripping over it.

No electrical appliance should be touched while you have your hand on a water faucet.

O.M.E.A. AND A.M.E.A. CANCEL FEB. MEETINGS

Wartime Conditions Responsible—Future Plans
Discussed At Joint Executive Meeting

RECOGNIZING the serious wartime problems confronting railways and hotels in providing transportation and accommodation for large numbers of convention delegates, the Ontario Municipal Electric Association and the Association of Municipal Electrical Utilities have cancelled the annual meetings originally scheduled for February 6 and 7 at the Royal York Hotel, Toronto.

Announcement of the cancellation was made by W. Ross Strike, Bowmanville, president of the O.M.E.A., and S. W. Canniff, Ottawa, president of the A.M.E.U.

At the time of going to press, arrangements were being made for a joint meeting of the O.M.E.A. and the A.M.E.U. executives on February 7, when ways and means for carrying on the business of the two associations would be discussed. The advisability of continuing for the time being with the present slate of officers, and the possibility of arranging for meetings this year were, it is understood, among the more important matters to be reviewed.

It had been planned to include the address by Senator George D. Aikin of Vermont on the St. Lawrence river development in the programme drawn up for the annual meeting of the two associations. When the convention was cancelled, the Toronto Electric Club invited Senator Aikin to speak at the club's luncheon in the Royal York Hotel on February 7. In view of the importance of the occasion, the Canadian Club was asked to participate. The members of the O.M.E.A. and the A.M.E.U. were planning to attend in a body.

Last year, approximately 1,200 O.M.E.A. and A.M.E.U. delegates, representing 176 municipalities throughout Ontario, attended the annual meetings in Toronto.

Mr. Strike, who is also an H.E.P.C. commissioner, said that hotel managements were at present hard pressed when called upon to take care of large gatherings of people who required sleeping accommodation. At the same time, railway facilities were being taxed to the limit at present to meet the wartime demands of the Armed Forces and people engaged in all phases of Canada's war effort.

"We regret very much having to put off these meetings which have been held in Toronto for many years," stated Mr. Strike, "for they are very important, not only to the delegates but to the people of this province. All our deliberations concern the operations and policies of Hydro which has been playing a pre-eminent role in this war. Under the circumstances, however, we felt that it was the right thing to do. Although most of our delegates were planning to come to Toronto, I am sure they will appreciate the situation and endorse the action which we have taken."

BUY A-

WAR SAVINGS STAMP
EVERY FRIDAY!



THE Food Industry of Canada has been requested by the Hon. J. L. Ilsley, Minister of Finance, through the National War Finance Committee, to conduct a campaign in War Savings Stamps for a six-week period—February 2 to March 9.

Under the guidance of the National Food Executive Committee, the Food Industry of Canada will launch the "Friday is Stamp Day" plan suggested by the National War Finance Committee. Under this plan, food merchants will be asked to sell War Savings Stamps for six consecutive Fridays, beginning with February 2 and ending March 9. This will mean a total of six selling days for the food merchant, as compared with a full month's selling in previous War Savings Stamp Campaigns.

12,000,000 STAMPS OBJECTIVE

Twelve million War Savings Stamps is the objective that has been set for the "Friday is Stamp Day" drive and according to figures released by the Ration Board, this number is slightly in excess of the total population of Canada, exclusive of the Armed Forces. Therefore, the Food Industry and its allies will have to sell the equivalent of slightly more than one War Savings Stamp for each man, woman and child in Canada to reach the 12,000,000 War Savings Stamp objective.

DANCE AT TOP HAT

ONCE again the Ontario Hydro-Electric Club has made plans to boost the Consolidated War Services Fund through the proceeds from the annual dance which is scheduled to be held on March 2, at the Club Top Hat, Toronto.

F. B. Pope, chairman of the dance committee, announces that refreshments will be served and a programme of entertainment is to be presented during the evening.

Other members of the dance committee are as follows: Jean Glover, Marion Corby, W. V. Morris, Roy E. Taylor and George H. Taylor.

Lighter Lines

When the pigskin bounced into the chicken yard, the rooster quickly and excitedly called his faithful into conference. Post-war planning?

Judge: Order! Order! Order in the court.

Prisoner: Make mine a ham on rye.

The cannibal king of the Mambas issued a proclamation which forbade the eating of small boys. Youth, no longer, will be served!

The city lad saw a peacock for the first time. "Gosh," he exclaimed, "a rooster in full bloom!"

Sailor (to buddy on quiet bathing beach when girl appears on scene): "Shape ahoy!"



NOTE: THIS PICTURE IS AN ADVERTISEMENT FOR THE WORLD'S MOST FAMOUS...

"I don't care if he is playing war,
The next time he calls me a Jap,
I'll shut your gas off!"

Kitty: The man I marry must be a hero.

Katty: Oh, don't be such a pessimist.

Then there is the girl who thinks a gentleman is a patient wolf.

The war picture looks very black for Germany. A new kind of painter could change things.



"Those guys are cavalry recruits!"

Untold wealth is that which is not recorded on the income tax form.

Yellow lights on traffic signals are said to have originated in Scotland to give drivers time to start the engines of their cars.

The British prisoner-of-war stopped telling his Nazi guard jokes before bedtime because he was always awakened by the Nazi's laughter in the middle of the night.



"You know what I heard today?
We been frozen to our jobs!"

Hookem: What's the difference between a gold filling, an expensive wedding and a maple syrup bucket.

Tookem: A gold filling's an inlay, an expensive wedding's an outlay, but why the maple syrup bucket?

Hookem: To catch the sap!

She: Smoke? He: Nope.

Drink? Nope.

Play games? Nope.

Kiss? Nope.

Hold hands? Nope.

She (exasperated): What the devil do you do?

He (slowly and shyly): S-t-e-a-l g-g-l-a-n-c-e-s.

Mona: My mother had an awfully odd experience in Paris before the last war. Kitty: I though you were born in Hamilton.



"This is a stick-up, lady. Give me the money or I put the mouse in the hole!"

"Have you any 4-volt, 2-watt bulbs?" enquired the electrical engineer.

Salesman: For what? Engineer: No, two.

Salesman: Two what? Engineer: Right.

Tourist: What statue is that on the dam? Guide: That's not a statue. It's an engineer.

EMPIRE OF THE NORTH

(Continued from page 12)

miles north of the Minnesota border. Although the quantity of ore at this mine has not as yet been definitely established and may or may not be equal to that of the ore bodies located north west of Lake Superior, near Duluth in the State of Minnesota, the quality is so superior to that of any other Canadian or American ore, that it has been recognized as a major find for the steel industry on this continent. It is comparable in every respect to the famous iron ores of Sweden.

Steep Rock Lake is a body of water in the shape of the letter "M" and the ore bodies are located beneath the water of the lake, contained within the two central arms. These arms are approximately 12 miles in length and from 1 to 3 miles in width with a depth of water varying from 200 to 300 feet. To reach the ore, dewatering operations involving the removal of some 175,000,000,000 gallons of water had to be undertaken.

A great part of this work has already been accomplished, a portion of the ore body has been exposed and mining operations are now in progress. A transmission line was constructed from Port Arthur to the mine, and Nipigon power to the extent of 7,500 horsepower has been utilized for pumping and mining operations.

Potentialities exist for a tremendous development in electric steel production in Canada, for no other country has the unique combination of low-cost Hydro power and high quality iron ore in such close proximity, and the possibilities of what may be accomplished in future with the Steep Rock iron ore deposits may be illustrated by the results obtained from the great steel industrial plant of the Algoma Steel Company at Sault Ste. Marie. This is the largest plant of its kind in Canada, with its finished products, especially steel rails for railroad construction and maintenance, being shipped not only to local markets from coast to coast, but also throughout the British Empire.

TO AID RED CROSS

THIS year the Ontario Hydro-Electric Club is planning to donate something like \$3,500 to the Red Cross, whose campaign for \$10,000,000 will be conducted during the month of March.

To date, The Canadian Red Cross Society has shipped 13,460,000 food parcels to Empire and Allied prisoners of war. Over 50 per cent of the gross budget is utilized for this work. In addition, 39,000,000 hospital, medical supplies, field comforts and articles of relief clothing have been shipped overseas, and millions more will be needed urgently this year.

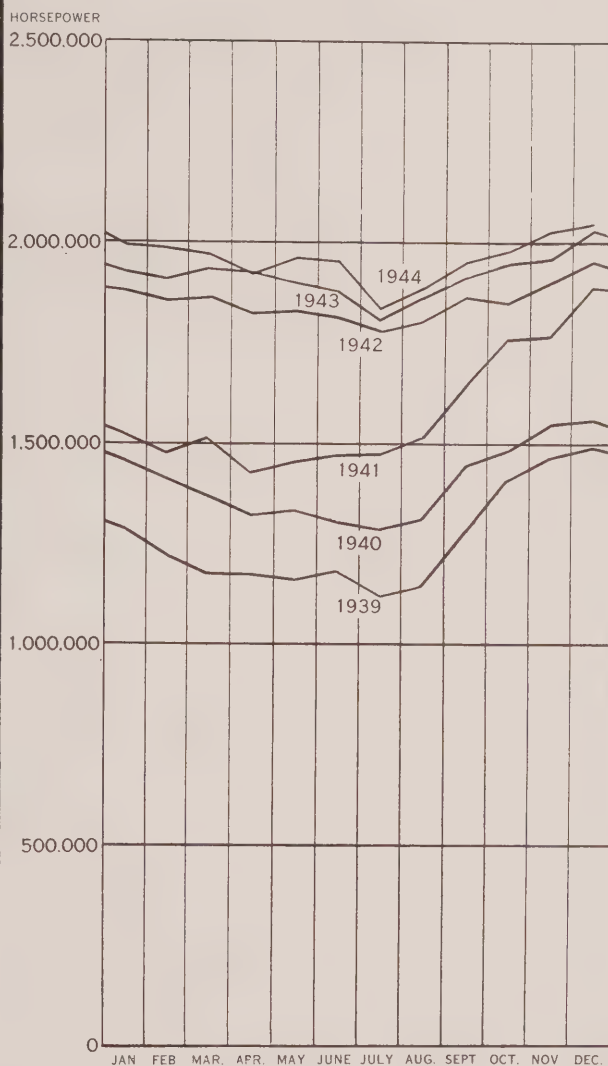
Among the many other activities carried on by the Red Cross is that of enlisting the co-operation of blood donors. To date, the Canadian Red Cross has received 1,800,000 blood donations for the battlefronts of the world.

Dr. Fred W. Routley, national commissioner, has issued a strong appeal for support in the coming campaign.

SOUTHERN ONTARIO SYSTEM

EMBRACING NIAGARA, GEORGIAN BAY AND EASTERN ONTARIO DIVISIONS

PRIMARY LOAD



PRIMARY LOADS

AREA SERVED BY	MAXIMUM 20-MINUTE PEAK H.P.		PER CENT INCREASE
	DECEMBER, 1944	DECEMBER, 1943	
SOUTHERN ONTARIO SYSTEM	2,044,416	2,033,103	+ 0.6
THUNDER BAY SYSTEM	119,303	125,737	- 5.1
NORTHERN ONTARIO PROPERTIES	<u>220,936</u>	<u>189,652</u>	+ 16.5
TOTAL	2,384,655	2,348,492	+ 1.5

PRIMARY AND SECONDARY LOADS

SOUTHERN ONTARIO SYSTEM	2,084,275	2,114,953	- 1.5
THUNDER BAY SYSTEM	135,523	130,295	+ 4.0
NORTHERN ONTARIO PROPERTIES	<u>275,611</u>	<u>191,918</u>	+ 42.6
TOTAL	2,493,409	2,437,166	+ 2.3

MUNICIPAL LOADS, NOVEMBER, 1944

SOUTHERN ONTARIO SYSTEM NIAGARA DIVISION (25-Cycle)

	H.P.	Popula- tion		H.P.	Popula- tion		H.P.	Popula- tion
Acton	1,696	1,903	Erie Beach	9	21	Palmerston	623	1,400
Agincourt	229	P.V.	Essex	559	1,886	Paris	1,944	4,604
Ailsa Craig	126	487	Etobicoke	9,061	V.A.	Parkhill	230	1,029
Alvinston	128	649	Exeter	829	1,654	Petrolia	1,063	2,768
Amherstburg	1,037	2,704	Fergus	1,334	2,759	Plattsville	141	P.V.
Ancaster Twp.	493	V.A.	Fonthill	222	860	Point Edward	1,845	1,199
Arkona	62	403	Forest	612	1,562	Port Colborne	1,925	6,928
Aurora	1,405	2,821	Forest Hill	8,132	12,172	Port Credit	1,019	1,934
Aylmer	954	1,985	Galt	12,436	15,126	Port Dalhousie	893	1,599
Ayr	224	760	Georgetown	1,938	2,452	Port Dover	545	1,790
Baden	673	P.V.	Glencoe	214	763	Port Rowan	123	700
Beachville	776	P.V.	Goderich	1,764	4,674	Port Stanley	390	824
Beamsville	506	1,227	Granton	72	P.V.	Preston	4,462	6,656
Belle River	194	836	Grimsby	914	1,988	Princeton	134	P.V.
Blenheim	669	1,873	Guelph	12,646	23,074	Queenston	120	P.V.
Blyth	136	662	Hagersville	1,165	1,524	Richmond Hill	532	1,295
Bolton	222	629	Hamilton	169,113	164,719	Ridgetown	711	1,986
Bothwell	147	683	Harriston	417	1,292	Riverside	1,331	5,235
Brampton	2,907	6,157	Harrow	572	1,092	Rockwood	131	P.V.
Brantford	23,802	31,622	Hensall	221	686	Rodney	165	758
Brantford Twp.	1,523	V.A.	Hespeler	3,050	2,938	St. Catharines	30,939	34,541
Bridgeport	163	P.V.	Highgate	94	322	St. Clair Beach	95	138
Brigden	93	P.V.	Humberstone	691	2,831	St. George	211	P.V.
Brussels	151	784	Ingersoll	3,634	5,757	St. Jacobs	348	P.V.
Burford	206	P.V.	Jarvis	193	513	St. Marys	1,671	4,009
Burgessville	50	P.V.	Kingsville	663	2,453	St. Thomas	8,524	17,045
Burlington	1,786	3,925	Kitchener	30,141	35,465	Sarnia	6,868	18,599
Burlington Beach	478	1,474	Lambeth	150	P.V.	Scarborough Twp.	5,632	V.A.
Caledonia	411	1,430	LaSalle	282	907	Seaforth	1,054	1,782
Campbellville	42	P.V.	Leamington	1,966	6,048	Simcoe	3,061	6,304
Cayuga	152	700	Listowel	1,521	2,984	Smithville	221	P.V.
Chatham	7,768	17,184	London	43,906	81,567	Springfield	71	382
Chippawa	378	1,228	London Twp.	672	V.A.	Stamford Twp.	3,347	8,275
Clifford	110	491	Long Branch	1,656	4,258	Stoney Creek	273	933
Clinton	628	1,879	Lucan	193	643	Stouffville	328	1,198
Comber	173	P.V.	Lynden	112	P.V.	Stratford	7,656	17,163
Cottam	85	P.V.	Markham	386	1,175	Strathroy	1,572	2,834
Courtright	53	355	Merlin	89	P.V.	Streetsville	204	701
Dashwood	125	P.V.	Merritton	12,465	2,916	Sutton	196	949
Delaware	79	P.V.	Milton	1,571	1,915	Swansea	3,313	7,100
Delhi	561	2,430	Milverton	507	994	Tavistock	644	1,080
Dorchester	121	P.V.	Mimico	3,209	8,785	Tecumseh	415	2,391
Drayton	146	528	Mitchell	769	1,670	Thamesford	229	P.V.
Dresden	521	1,525	Moorefield	52	P.V.	Thamesville	224	816
Drumbo	94	P.V.	Mount Brydges	102	P.V.	Theftord	145	598
Dublin	49	P.V.	Newbury	36	288	Thorndale	78	P.V.
Dundas	3,292	5,245	New Hamburg	625	1,441	Thorold	3,407	5,284
Dunnville	1,583	3,916	Newmarket	1,899	3,800	Tilbury	1,558	1,923
Dutton	267	830	New Toronto	11,265	9,469	Tillsonburg	1,640	4,602
East York Twp.	11,001	41,578	Niagara Falls	11,003	20,371	Toronto	389,010	657,612
Elmira	1,330	2,069	Niagara-on-the-Lake	869	1,764	Toronto Twp.	3,526	V.A.
Elora	492	1,185	North York Twp.	12,224	V.A.	Wallaceburg	4,694	4,802
Embro	113	420	Norwich	470	1,301	Wardsville	43	221
Erieau	120	218	Oil Springs	194	541	Waterdown	270	867
			Otterville	109	P.V.	Waterford	481	1,294
						Waterloo	6,211	8,968
						Watford	418	1,023

MUNICIPAL LOADS, NOVEMBER, 1944

	H.P.	Popula- tion		H.P.	Popula- tion		H.P.	Popula- tion
Welland -----	13,226	14,899	Neustadt -----	47	431	Kempville -----	362	1,230
Wellesley -----	128	P.V.	Orangeville -----	751	2,558	Kingston -----	16,525	29,545
West Lorne -----	262	768	Owen Sound -----	6,459	13,559	Lakefield -----	519	1,301
Weston -----	5,506	6,333	Paisley -----	133	530	Lanark -----	96	686
Wheatley -----	221	761	Penetanguishene --	1,094	4,177	Lancaster -----	60	570
Windsor -----	56,274	118,040	Port Carling -----	118	520	Lindsay -----	3,950	8,345
Woodbridge -----	649	1,100	Port Elgin -----	439	1,415	Madoc -----	214	1,130
Woodstock -----	9,484	12,339	Port McNicoll -----	103	950	Marmora -----	153	1,004
Wyoming -----	81	538	Port Perry -----	296	1,175	Martintown -----	42	P.V.
York Twp. -----	23,257	77,175	Priceville -----	10	P.V.	Maxville -----	113	811
Zurich -----	117	P.V.	Ripley -----	105	420	Millbrook -----	126	749
(66½-Cycle)			Rosseau -----	30	305	Morrisburg -----	336	1,484
Bronte -----	176	P.V.	Shelburne -----	272	1,053	Napanee -----	1,566	3,241
Oakville -----	1,587	3,369	Southampton -----	572	1,467	Newcastle -----	168	701
Trafalgar Twp. ----	649	V.A.	Stayner -----	296	1,106	Norwood -----	168	710
GEORGIAN BAY DIVISION			Sunderland -----	80	P.V.	Omeme -----	202	630
(60-Cycle)			Tara -----	132	510	Orono -----	98	P.V.
Alliston -----	440	1,700	Teeswater -----	165	973	Oshawa -----	18,368	26,610
Arthur -----	185	1,089	Thornton -----	25	P.V.	Ottawa -----	39,553	150,816
Bala -----	140	355	Tottenham -----	109	532	Perth -----	1,908	4,187
Barrie -----	4,320	9,599	Uxbridge -----	322	1,480	Peterborough -----	14,307	24,977
Beaverton -----	207	941	Victoria Harbour --	63	979	Pictou -----	1,281	3,400
Beeton -----	88	617	Walkerton -----	1,098	2,534	Port Hope -----	2,860	4,997
Bradford -----	169	1,041	Waubashene -----	85	P.V.	Prescott -----	1,523	3,318
Brechin -----	49	P.V.	Warton -----	342	1,750	Richmond -----	71	428
Cannington -----	175	761	Windermere -----	28	117	Russell -----	82	P.V.
Chatsworth -----	87	333	Wingham -----	758	2,149	Smiths Falls -----	3,049	7,741
Chesley -----	567	1,812	Woodville -----	74	439	Stirling -----	298	947
Coldwater -----	187	545	EASTERN ONTARIO DIVISION			Trenton -----	5,652	8,183
Collingwood -----	3,056	6,249	(60-Cycle)			Tweed -----	303	1,181
Cookstown -----	88	P.V.	Alexandria -----	311	1,976	Warkworth -----	76	P.V.
Creemore -----	154	661	Apple Hill -----	50	P.V.	Wellington -----	236	948
Dundalk -----	247	686	Arnprior -----	1,265	4,019	Westport -----	111	725
Durham -----	375	1,874	Athens -----	107	626	Whitby -----	1,506	4,236
Elmvale -----	173	P.V.	Bath -----	48	325	Williamsburg -----	94	P.V.
Elmwood -----	76	P.V.	Belleville -----	7,969	15,498	Winchester -----	331	1,017
Flesherton -----	75	452	Bloomfield -----	117	636	THUNDER BAY SYSTEM		
Grand Valley -----	148	645	Bowmanville -----	3,189	3,850	(60-Cycle)		
Gravenhurst -----	1,262	2,261	Brighton -----	500	1,462	Fort William -----	18,447	30,370
Hanover -----	1,364	3,190	Brockville -----	5,277	11,112	Nipigon Twp. -----	266	V.A.
Holstein -----	20	P.V.	Cardinal -----	290	1,602	Port Arthur -----	25,482	24,217
Huntsville -----	1,311	2,943	Carleton Place -----	1,953	4,143	NORTHERN ONTARIO		
Kincardine -----	769	2,483	Chesterville -----	293	1,094	PROPERTIES		
Kirkfield -----	26	P.V.	Cobden -----	135	643	Nipissing District		
Lucknow -----	394	856	Cobourg -----	2,381	5,907	(60-Cycle)		
MacTier -----	136	V.A.	Colborne -----	258	960	North Bay -----	5,305	16,013
Markdale -----	206	776	Deseronto -----	236	1,002	Patricia District		
Meaford -----	759	2,759	Finch -----	90	396	(60-Cycle)		
Midland -----	4,869	6,754	Frankford -----	160	1,095	Sioux Lookout -----	335	1,967
Mildmay -----	146	764	Hastings -----	137	823	Sudbury District		
Mount Forest -----	520	1,936	Havelock -----	176	1,103	(60-Cycle)		
			Iroquois -----	257	1,123	Capreol -----	271	1,660
						Sudbury -----	11,096	36,724

WHERE ARE THE HYDRO LINES?



ARE YOU, TOO, WAITING FOR HYDRO RURAL SERVICE? If so, you can be sure that Hydro is working in your direction as fast as possible. Actually, in 1944, The Hydro-Electric Power Commission of Ontario constructed 10 times as many miles of rural lines as in 1943.

In 1943, there were approximately 40 miles of rural lines constructed.

In 1944, there were approximately 400 miles of rural lines constructed.

Consumers added in 1943 numbered 2025.

Consumers added in 1944 numbered 9776.

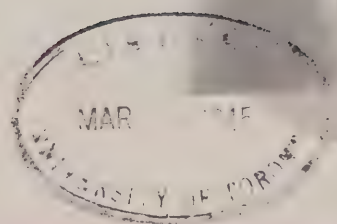
Wartime shortages of manpower and materials prevented even greater expansion in 1944; as an example, some 1200 Hydro employees are in the armed forces or on loan to the Government for special technical work . . . many materials needed in the construction of Hydro lines are also required in the manufacture of war weapons . . . your Hydro is doing its best under the existing conditions to provide electricity to essential services.

There are now about 8000 applications for new rural services which have been approved that will be connected as soon as possible. However, there will probably be further delays because of the acute shortages of manpower and materials as a result of wartime conditions. If the Hydro lines seem unduly slow in getting to your farm, please understand that the Commission while handicapped is none the less doing its utmost to serve you.

THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO

AT EASTER

HYDRO *News*



VOL. 32

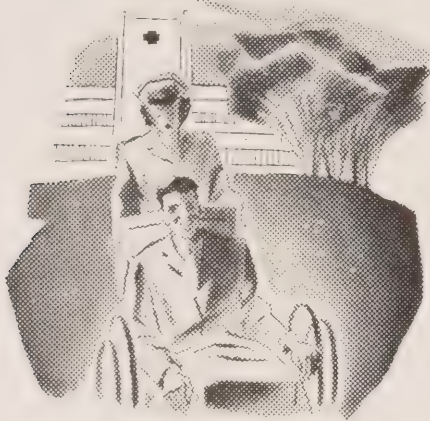
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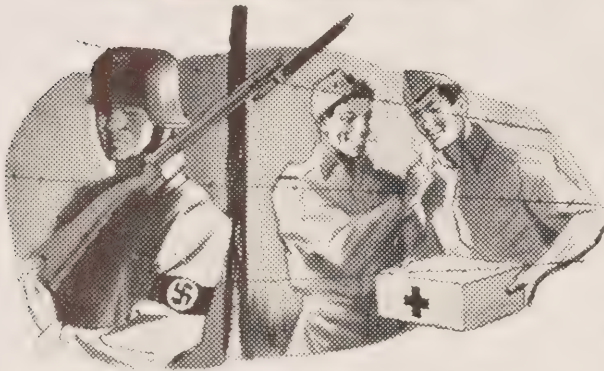
THE RED  CROSS SERVES

ALL

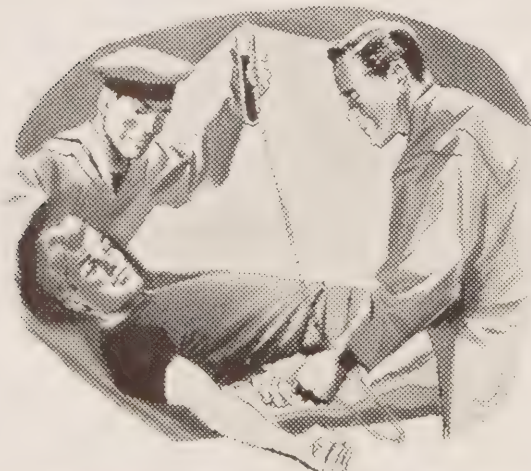
Fronts



... AT HOME



... ABROAD



... ON LAND & SEA

The Canadian Red Cross stands by ready to help your serviceman wherever he may be, on *all* the battle fronts throughout the world. Wherever war has wrought its desolation the Red Cross is ready to aid in comforting those who are suffering.

The prisoner of war . . . the desolate, the homeless of war-torn countries . . . innocent children and old people, all alike look to the Red Cross for a helping hand.

Because the Red Cross depends entirely upon public support—*since it cannot accept money from any government* and retain its international privileges—the Red Cross must look to YOU o do your part in financing these invaluable services.

TEN MILLION DOLLARS must be raised NOW to carry on this vital work. Your gift will greatly help this worthy cause. Be as generous as you can . . . make a donation T.N.T. . . . Today, Not Tomorrow.

You can still save a life with a Blood Donation.
Inquire at your nearest Red Cross Clinic.

THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO



THE HYDRO - ELECTRIC POWER COMMISSION OF ONTARIO

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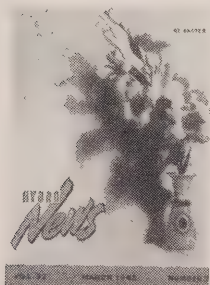
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The Front Cover



NEVER has a Spring been so eagerly awaited as this Spring of 1945 — after a long and dreary winter — after these long and terrible war years. A fitting symbol of Easter-time is the beautiful photograph on this month's cover. It was taken by J. H. Mackay, world-famous photographer and member of the Commission staff.

Volume 32

March, 1945

Number 3

CONTENTS

	Page
Water Over The Dam! - - - - -	2
Page Three - - - - -	3
Empire Of The North - - - - -	4
Senator G. D. Aiken's Address - - - - -	11
"Seein's Believin' " - - - - -	13
Harnessing Horsepower - - - - -	16
North York - - - - -	20
Around The Hydro Circuit - - - - -	23
Hydro Home Forum - - - - -	24
Awards To Hydro Men - - - - -	25
Lighter Lines - - - - -	26
Downwords Puzzle - - - - -	27
Monthly Load Summary - - - - -	27
Municipal Loads - - - - -	28





A NEIGHBOUR SPEAKS

REPUBLICAN Senator George D. Aiken of Vermont rendered a service to the people of Canada as well as to his own people in the United States when, in his Toronto Electric Club address, he emphasized the far-reaching benefits which would redound to both countries with the completion of the St. Lawrence seaway and power development project.

The Senator's remarks made it clear that this is a project which completely transcends any question of political expediency. Men of different political tenets in Canada and the United States have recognized the tremendous contribution it would make to the economic and industrial progress of both countries as well as to the general welfare and happiness of both peoples.

It will be recalled that early in 1932 Canada and the United States entered into a treaty providing for the completion of the waterway. In 1934 when it was presented to the U.S. Senate for ratification, it received a substantial majority but not the two-thirds vote which is required in the case of a treaty. Senator Aiken states that he does not know why it was submitted as a treaty for the Boundary Waters Treaty of 1909 provided that future development of International Boundary Waters might be approved by a simple agreement requiring only a majority vote of both Houses of the United States Congress.

Because it was presented as a treaty, opponents of the project were strong enough to block ratification in 1934 and, as the Senator points out, they successfully postponed a vote on the bill in 1941 when the governments of Canada and the United States again reached an agreement.

Senator Aiken's observations on this "selfish opposition" are very much to the point. "We cannot," he said, "let the progress of 50 million people be obstructed because a few do not want to change their ways of doing business."

When completed, the St. Lawrence development would be one of the greatest sources of low-cost electrical energy in the whole of North America, generating more energy than that pro-

duced by the entire Tennessee Valley Authority during the past year, and three times the energy that can be generated by the great Dnieper Dam in Russia. One-half of this 2,200,000 horsepower would belong to the Province of Ontario and one-half to the State of New York. Thousands of farm and rural homes as well as homes and industries in urban centres on both sides of the international line would stand to benefit, and thousands of jobs would be opened up to returning service men during and after construction of the project.


From the standpoint of navigation, completion of the St. Lawrence would mean that a 2,700-mile waterway, stretching from the Atlantic to the heart of the continent, would be opened up to ocean-going ships. This in turn would mean a tremendous saving in transportation costs, the importance of which is recognized by prairie grain growers and farmers whose products are shipped to the markets of the world.

While these facts alone represent more than sufficient justification for proceeding with the project as soon as materials and men are available, there is also another very vital consideration which has been accentuated by the lessons of the present war. As Senator Aiken has stated, completion of the Great Lakes-St. Lawrence Seaway would not only have a far-reaching effect upon the expansion of peace-time pursuits, but it would provide a greater degree of national safety for both Canada and the United States in the event of future hostilities.

This is a practical, common sense viewpoint for there will be a greater assurance of enduring peace if free, peace-loving peoples are strong and vigilant.

The great majority of Canadians and of their good neighbours across the friendly border will be united in the belief that selfish opposition can have no place in considering the merits of the St. Lawrence development which will be discussed again in Washington in the near future.

There can be but one principle, and that is the greatest good for the greatest number.

 WATER OVER the dam! Terrifying yet majestic, this mighty rush of water, churning chaotically, flinging spray far into the air, is surely a fitting symbol of power unleashed. The picture was taken by J. H. Mackay of the Commission staff, from the bridge over the dam at Hydro's Abitibi Canyon development.

EMPIRE OF THE NORTH



By T. C. James

H.E.P.C. Municipal System Engineer

NORTHERN ONTARIO'S vast timber resources with the resultant processing of various types of wood products in combination with the great hydro-electric developments of this widespread Empire have created industries of first-ranking importance in international trade.

Mills for the production of sawn and finished lumber, as well as newsprint, kraft, and high grade papers were originally established on a small scale in and around scattered settlements. The rapid expansion of this type of industry, involving extensive woods operations, has resulted in building up numerous towns, villages and townsites, as well as creating a considerable increase in the populations of existing municipal and urban centres.

The saw mills in Ontario during the year 1943 produced 256 million board feet of lumber, the greater portion of which was cut in the Northern Ontario district. Further impetus was given to this industry with the construction of Canada's great transcontinental railways which created an enormous demand for railroad ties, the 1943 production of which was 400,000. Of far greater importance, however, has been the development of the



T. C. James

THIS is the last in the series of articles on "Empire of The North" written by Mr. James.—The Editor.

pulp and paper industry, as indicated by the total provincial cut, and shipment from Crown Lands in the season of 1943-1944 of 1,134,318 cords of pulpwood, the greatest portion of which was produced in the northern districts.

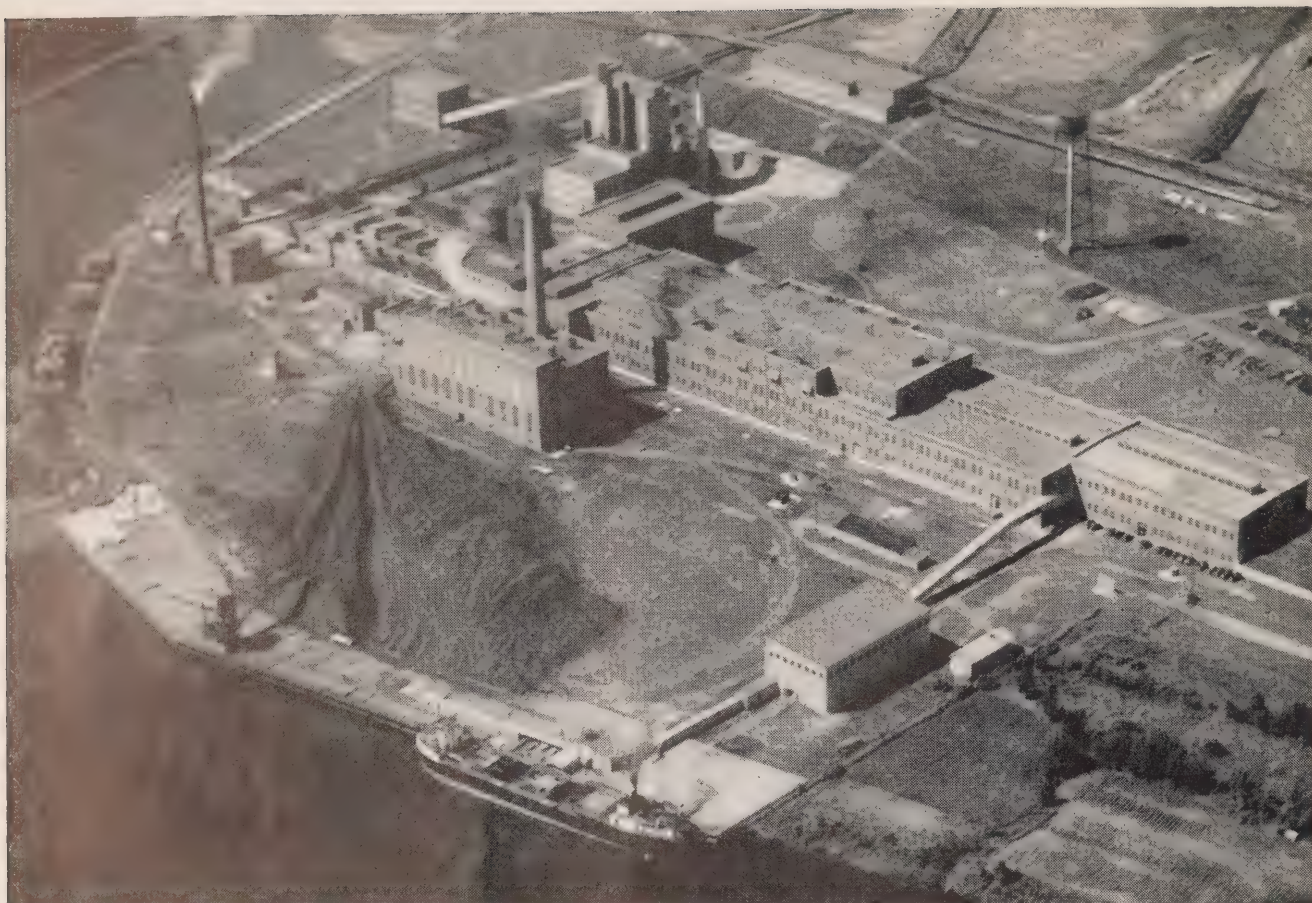
Up to the end of 1943, twelve pulp and paper mills had been placed in operation, eight of which have a combined capacity of over 3,000 tons of newsprint paper per day. The Abitibi Pulp and Paper Company's mill at Iroquois Falls and the Spruce Falls Pulp and Paper Company's mill at Kapuskasing are the two largest newsprint mills on the North American continent.

The lakehead district of Port Arthur and Fort William enjoys the distinction of being the largest individual centre of pulp and paper operations in Northern Ontario. Here are located three newsprint mills having a combined capacity of 825 tons per day, and one high-grade mill with a capacity of 90 tons per day of book, and special types of paper used for rotogravure, special half-tone work and printing purposes. At the present time a considerable expansion in this industry is being planned. The Kalamazoo Vegetable Parchment Company will place a large mill in operation at Espanola, in the Sudbury district, as soon as war conditions will permit and the Brompton Pulp and Paper Company is already constructing a large kraft mill



TOP ILLUSTRATION shows the Richardson grain elevator at Port Arthur. Temporary storage can be seen on the left, and the Provincial Paper Company and Thunder Bay Paper mill in the background to the right. Port Arthur's position at the head of the Great Lakes and its splendid natural harbour have aided its development into a major port for freight shipments by water. The bulk of western Canada's cereal crop moves eastward through its giant terminal grain elevators.

LOWER LEFT picture gives an interesting impression of the interior of a bulk cargo freight boat under construction at the Port Arthur Shipbuilding Company. This type of vessel is used on the Great Lakes for iron ore, grain and coal shipments. LOWER RIGHT illustration shows the Iroquois Falls Development mill of the Abitibi Pulp and Paper Company Limited. In the manufacture and processing of newsprint and various other types of paper, each individual mill unit requires several thousand horsepower.



AN IDEA of the extent of pulp and paper plant operations at the head of the lakes may be gained from this imposing view of the Great Lakes Paper Company, Limited at Fort William.

at Red Rock near Nipigon, and the Marathon Paper Company is establishing a large kraft mill near Peninsular at the east end of Lake Superior.

Northern Ontario has been richly endowed by nature with an abundance of hydraulic power sites located on the numerous rivers which traverse the entire area from east to west and north to south. The conversion of any and all types of raw material into finished products is generally

dependent upon securing a sufficient amount of mechanical and electrical energy, very large blocks of which, amounting to several thousand horsepower, are absolutely necessary for each individual mill unit, in the manufacture and processing of newsprint and various other types of paper. At the present time the pulp and paper industry in Ontario is utilizing, or has available, some 330,000 horsepower in power development capacity, inclusive of 65,000 horsepower purchased from The Hydro-Electric Power Commission.

Deep water transportation on Lake Superior makes possible the cheap transportation of coal for any industry which may be located adjacent to good harbour facilities, and as process steam is an absolute necessity in the manufacture of pulp and paper products, large quantities of coal are shipped to the districts in which this type of industry is located, for use in fuel-fired boilers, and in some cases for the production of mechanical energy. Almost all of the paper mills are also equipped with electric steam boilers and utilize both coal and electricity for steam generation; the electrical power being generated, or purchased, during the "off peak" and "abnormal high water-flow" periods at the power developments which constitute the source of supply. Many millions of kilowatt-hours are thus used which otherwise would represent waste water flowing over the dam, thereby effecting not only a saving

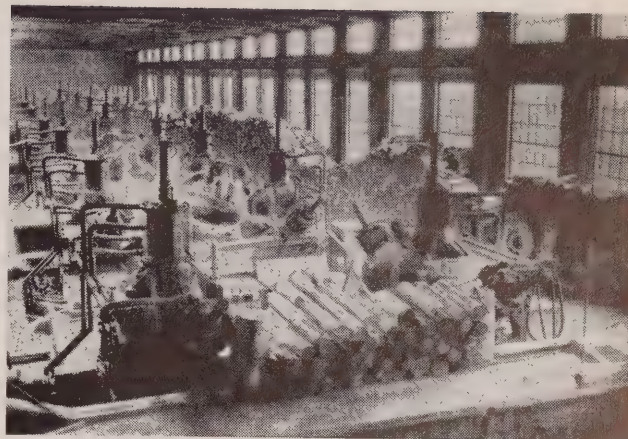


BARKING MACHINES in the wood room of a paper mill.

in production costs to the mill owners, but at the same time eliminating the forwarding of Canadian funds to the United States for the purchase of coal, all of which creates better economic conditions in the maintenance of favourable exchange rates in our national currency set-up.

Electrical power, however, generated at hydraulic developments, constitutes the chief source of power supply in Northern Ontario, and it is possible to secure a sufficient amount of this type of energy to assure the successful and economical operation of industry for as far into the future as can be forecast at the present time. Evidence of this assumption is found in the fact that it is possible to develop hydraulic power at the major sites on the various streams in this section of the province, based on installed capacities at 75 per cent load factor, and inclusive of the Upper Ottawa River developments at Cave and Des Joachims Rapids in the order of a combined total capacity of 2,500,000 to 3,000,000 horsepower.

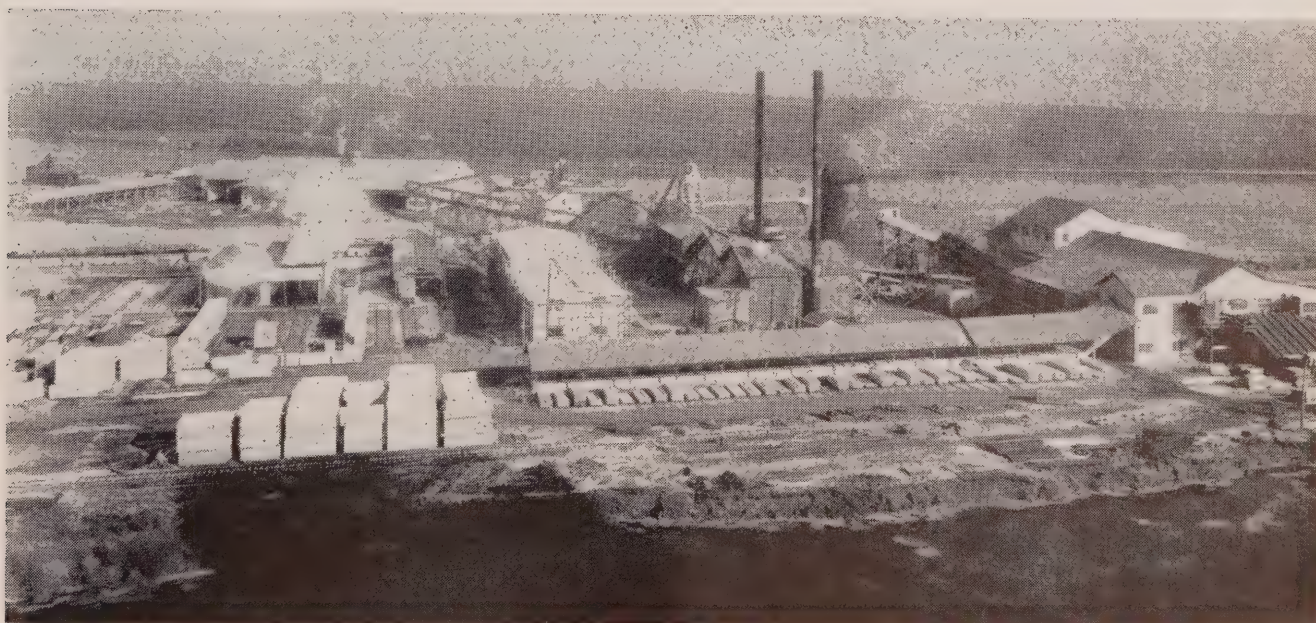
Should the proposed Upper Ottawa river power sites be used in future for supplying the growth load requirements of the Southern Ontario 25-cycle districts, there will still be available some 1,500,000 horsepower in undeveloped sites for use in the Northern Ontario areas, as already close to 1,000,000 horsepower has been developed and is being used, or is available from the generating plants already constructed and in operation. In this connection it might be stated that the selection of the installed capacity in designing hydro-electric power developments is dependent upon a careful study of the amount of flow available and the characteristics of the load to be supplied. Installed capacities are generally in excess of the amount of load which can be carried by generating plants at all times in order that benefits may be obtained from generation at high flow periods above the average conditions, to provide for the sale and use of secondary or at-will power.



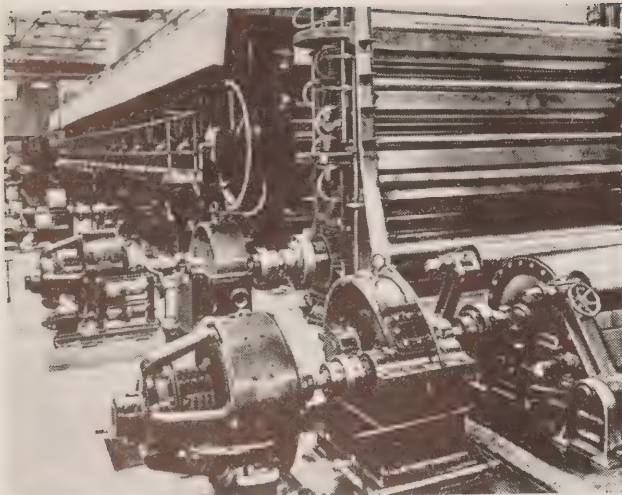
THIS ILLUSTRATION shows wood grinding machines in a paper mill.

The Hydro-Electric Power Commission's contribution in hydro-electric power developments in Northern Ontario amounts to 541,590 horsepower at the present time, and all other generating plants are owned by private interests and, with the exception of those at and near Sault Ste. Marie, Kenora and Fort William, are utilized almost exclusively by the International Nickel Company, and by individual pulp and paper companies for their own particular industrial units.

Power requirements for the Sudbury and Nipissing districts* are supplied from eight hydro-electric developments operated by The Hydro-Electric Power Commission of Ontario. These plants have a combined capacity of 31,500 horsepower. Power is generated at 60 cycles and utilized for domestic and commercial purposes in the cities of Sudbury and North Bay and in adjacent rural districts as



HUGE PLANT of the Great Lakes Lumber Company, Limited, at Fort William, which has a sawing capacity of 125,000 board feet per eight-hour day.



ELECTRICALLY-DRIVEN paper machines in a newsprint paper mill.

well as by both the Falconbridge and International Nickel Companies for mining operations.

The International Nickel Company also operates five hydro-electric plants through its subsidiary, the Huronian Company Limited. The combined capacities of the latter company's developments total 62,525 horsepower which is used exclusively for nickel production. The total combined capacity of all existing hydro-electric power developments in the Sudbury-North Bay section, inclusive of the Espanola site of the Kalamazoo Vegetable Parchment Company, both publicly and privately owned, is 120,000 horsepower.

Power developments in the Cochrane and Timiskaming districts* supply the industrial requirements in the Cobalt, Kirkland Lake, Larder Lake, and Porcupine gold mining sections, which are used largely in the production of gold, as well as for the domestic and commercial requirements in the populated centres throughout those areas. These districts were served formerly by both the Canada Northern Power Corporation and The Hydro-Electric Power Commission of Ontario, and are now being served exclusively by the Commission (which has recently purchased the company's Ontario system) from nine hydro-electric power developments, having an installed capacity of 330,840 horsepower.

The Abitibi Power and Paper Company owns and operates power developments at Iroquois Falls, Twin Falls and Island Falls located on the Abitibi river, both below and above the mill site. These plants have a combined installed capacity of 106,000 horsepower, and supply the power requirements of the company's pulp and paper mill located at the town of Iroquois Falls. The same company owns and operates a power development on the Mattagami river at Smooth Rock Falls, having an installed capacity of 9,350 horsepower, which is utilized at that location for the operation of an additional pulp mill.

The Spruce Falls Pulp and Paper Company also owns and operates a power development at Smokey Falls on the Kapuskasing river, having an installed capacity of 56,250 horsepower, which is utilized to operate that company's newsprint mill located at Kapuskasing. Also located

in this district is The Hydro-Electric Power Commission's Abitibi Canyon development with an installed capacity of 264,000 horsepower. The total combined capacities of all existing power developments in the Cochrane and Timiskaming districts is 502,440 horsepower.

The major undeveloped water power sites in the Sudbury, Nipissing, Timiskaming and Cochrane* districts are located on the Ottawa river at Des Joachims and Cave and Fondeau, at which sites some 460,000 horsepower can be developed. There is also a site on the French river near its mouth at Georgian Bay where a concentrated head can be obtained for a possible development of some 25,000 horsepower, and at three sites on the Mississagi river west of Sudbury at which some 93,000 horsepower can be developed. Several sites unsurveyed on the Abitibi river below the Canyon are estimated to be capable of developing from 130,000 to 160,000 horsepower. Thus, it is possible to procure over 700,000 horsepower from undeveloped water power sites in and adjacent to the eastern section of Northern Ontario whenever industrial development creates the necessary power market.

In the district of Algoma the total installed capacity of the existing generating plants at Sault Ste. Marie and on the Montreal and Michipicoten rivers, is in the neighbourhood of 81,000 horsepower. There are no major power sites in this section other than those already developed, except approximately 12,000 horsepower at the St. Mary's Rapids. Power requirements for expansion of future industrial activity in this section of the district, however, can be supplied through the medium of long distance tie transmission line connections with a chain of power developments to the west which will eventually be tied in with the Nipigon source of power, or by transmission line connections with the eastern source of power on the Mississagi river and in the Sudbury area, or from future power developments in the Albany river district. This reasoning is based on the fact that it is within the range of probability that all of The Hydro-Electric Power Commission's power sources in Northern Ontario will eventually be tied together by a network of long distance transmission lines.

Nipigon Development

Power supply in the district of Thunder Bay originated at Port Arthur from a small local hydro-electric development on the Current river within the city limits. The output of this plant was entirely inadequate to provide for any major industrial development. As the need for power grew, a hydro-electric development with an installed turbine capacity of 34,100 horsepower was placed in operation in 1906 on the Kaministiquia river approximately twenty miles west of Fort William by the Kaministiquia Power Company. This plant provided the power supply that gave the twin cities in the lakehead district an initial start in their industrial development.

After Nipigon power was made available for Port Arthur and Fort William in 1920, industrial loads in the lakehead district attained a phenomenal growth. In the twenty years following, 65,000 horsepower was utilized by the pulp and paper industry and some 25,000 horsepower by terminal grain elevators.

The Nipigon source of power is regarded as one of the most ideal of its kind on the North American continent.

The Nipigon river drainage basin contains 1700 square miles of storage facilities at Lake Nipigon and the flow of the river has been recently augmented by an additional flow from what is known as the Ogoki diversion. Lake Nipigon in itself can provide water storage to the extent of seven feet over its entire 1700 square miles of area while the river, inclusive of the added water from the Ogoki diversion, averages a flow of some 11,000 cubic feet per second. A difference in elevation of 250 feet between lakes Nipigon and Superior provides four possible power sites, two of which have already been developed, while the third at Pine Portage, and the fourth at Victoria Rapids, may in the future be either developed separately or under one concentrated head at the lower site at Pine Portage.

Additional Power Available

The combined installed capacity of the two developed sites at Cameron Falls and Alexander Landing is 149,000 horsepower, and the additional power available from the two undeveloped sites is estimated at 140,000 horsepower. Other possible developments in various parts of the Thunder Bay district* area, together with those already developed, will make available some 400,000 horsepower to take care of present and future industrial development.

The districts of Rainy River, Kenora, and Patricia* have been industrially developed by the output of hydro-electric power developments constructed chiefly for the utilization of power by pulp and paper and flour mills, and more recently, for gold mining and, of course, for the requirements for electrical service in the urban centres at and adjacent to such industrial establishments. Pulp and paper mills are located at Dryden, Fort Frances, and Kenora, with the latter enjoying the distinction of being the site of one of the largest producing flour mills in Canada.

Hydro-electric power is developed at thirteen generating stations, which have an installed capacity of over 100,000 horsepower, two of which are owned and operated by The Hydro-Electric Power Commission, with an installed capacity of 19,250 horsepower, which, prior to the war supplied the power requirements of eleven operating gold mines in the Red Lake, Pickle Lake and Woman Lake mining districts. Undeveloped power sites on the various streams of the Rainy River, Kenora and Patricia districts are estimated to be capable of producing in excess of 110,000 horsepower, exclusive of developments in the extreme northern portions of the latter district west of the shores of Hudson Bay.

Future for Mining

Only meagre data is available concerning the power development possibilities of the lower Albany river and its main tributaries, but there is evidence that considerable power may eventually be obtained from this source to the extent of some 200,000 horsepower, at suitable concentration points within the Albany drainage basin.

Little is known of the northern portion of the section of Patricia district, located along the western shores of Hudson Bay. Mining operations may hold a great future

for this district after it has been thoroughly explored and prospected. The combined output of a number of available hydraulic power sites in this district would indicate an estimated development of at least 25,000 horsepower, and if some major mineral discovery is made it will not be a difficult problem to transmit power from available developments to the south.

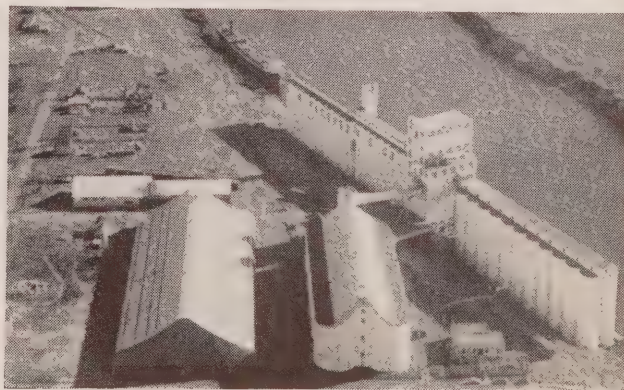
After Canada's western prairie country had been made accessible by the completion of the Canadian Pacific Railway and later by the construction of the various lines now forming a part of the Canadian National Railway System, the growing of various types of grain and its shipment to the world's markets became of great national and international importance. The geographical location of Port Arthur and Fort William has given that section of the province a most important position in the grain trade. These twin cities located at the head of the lakes have become one of the main links in the movement of western grain crops to the seaboard.

Grain Trade

Western grown grains are shipped mostly by rail to the lakehead district at Port Arthur and Fort William and there cleaned, graded and stored, prior to shipment, mostly by water during the navigation season, and by rail during the winter months.

Terminal grain elevators contain all the necessary equipment for preparing the various types of grain for marketing and for transfer between rail and water transportation.

The first terminal grain elevators, which were constructed on the water front at Port Arthur and placed in operation in 1883, had a storage capacity of 200,000 bushels. Before Nipigon power was made available to Port Arthur and Fort William in 1920, twenty elevators had been constructed and placed in operation. Of these nine were at Port Arthur and eleven at Fort William. At that time the combined storage capacity was 39,216,300 bushels. With the advent of Nipigon power at low cost it was possible to provide an ample amount of energy, and the number of elevators located within the two cities increased to twenty-eight with a combined storage capacity of



A GENERAL view of the N. M. Paterson and Company Limited, large grain elevator at Fort William.

approximately 145,000,000 bushels. The largest individual unit has a storage capacity of 13,900,000 bushels.

Enormous rail terminal facilities are also essential for handling this amount of grain, and both the Canadian Pacific and the Canadian National Railways have constructed yards at Fort William and Neebing, utilizing some 365 miles of trackage and capable of handling 7,500 cars per day. As many as 3,000 cars of grain per day have passed through the two terminal yards and 200,000 cars of grain per season have been received and handled by the two railway systems.

Originally, grain cars were unloaded at the various terminal elevators by a slow process taking thirty to forty-five minutes per car. Equipment is now provided, however, which will unload individual cars carrying from 1,600 to 1,700 bushels at the rate of seven per hour, or seven to eight minutes per car.

Power to operate these elevators is supplied to the Fort William units by the Kaministiquia Power Company and the Port Arthur units are served with Nipigon power by the local Public Utilities Commission.

Farming Areas

Although Northern Ontario in itself may not as yet be termed an agricultural district, due to its vast areas of standing timber, nevertheless, farming is fast becoming an important industry.

Dairy and mixed farming and cattle raising are extensively carried on at the present time, and several thousand square miles of excellent farming country is now being operated adjacent to the populated centres of North Bay, Sudbury, Kirkland Lake, Sault Ste. Marie, Port Arthur, Fort William and Rainy River. The Hydro-Electric Power Commission of Ontario is now operating over six hundred miles of primary rural distributing lines in the Northern Ontario section, and is now serving over five thousand customers located in various rural districts throughout that area, exclusive of mining townsites. Based upon applications already received, approximately two hundred miles of new primary rural lines will be con-

structed as soon as labour and material are available in the immediate postwar period.

Conclusions

While efficient transportation facilities are already available in Northern Ontario, the completion of the St. Lawrence seaway would open up the ports of lake Superior to ocean-going vessels. At the same time, the airplane is destined to play a still greater role in opening up the North.

There is also an existing hydro-electric development of close to one million horsepower, and the possibility of increasing this to a total of two-and-one-half million or three million horsepower in the future. The present industrial set-up is already playing an important part in international commerce, and there is every indication of much greater expansion by utilizing the vast store of still undeveloped raw materials. All these factors point to this great northern section of the Province of Ontario, fully justifying the name of "Empire of the North."

In conclusion, the writer desires to acknowledge the great assistance rendered by the following, in collecting the data used in this and preceding articles outlining the industrial development in Northern Ontario:

C. H. Macdonald, manager, Canadian Sales, International Nickel Company of Canada, Limited; L. K. Brindley, vice-president, Falconbridge Nickel Mines Limited; D. P. Douglass, inspector of mines, Province of Ontario; R. B. Chandler, manager of the Port Arthur Public Utilities Commission; S. B. Clement, chief engineer, Timiskaming and Northern Ontario Railway Company; H. L. Sanborn, hydraulic engineer, Abitibi Power and Paper Company, Limited; and Dr. Otto Holden, chief hydraulic engineer of The Hydro-Electric Power Commission of Ontario.

*The vast expanse of Northern Ontario, with its isolated and scattered populated centres, prevents the division of this territory into counties as in the southern portions of the province. As a result, nine electoral divisions, each covering widespread areas equivalent to a dozen or more counties, have been established and are known as Nipissing, Sudbury, Timiskaming, Cochrane, Algoma, Thunder Bay, Rainy River, Kenora, and Patricia districts. These districts cover the territory from the Ottawa river in the east to the Manitoba boundary in the west in the order named.



AN EXCELLENT view of the vast United Grain Growers plant at Port Arthur, showing a bulk-freight cargo vessel in the foreground.

CALLS FOR SPEEDY ACTION ON THE ST. LAWRENCE PROJECT

DESCRIBING the St. Lawrence river as the greatest known, undeveloped resource of North America, Senator George D. Aiken, Republican, of Vermont, in an address read at a special luncheon meeting of the Toronto Electric Club on February 7 at the Royal York Hotel, sounded a call for speedy post-war action on this project.

The luncheon had been arranged in order that as many as possible might hear the address of George D. Aiken, who is one of the leading champions of the St. Lawrence development in the Congress of the United States. In the absence of the Senator through illness, his address was read by Leland Olds, commissioner of the Federal Power Commission of Washington, D.C., who was accompanied to Toronto by Dr. James C. Bonbright, chairman of the Power Authority of the State of New York.

In moving a vote of thanks to Mr. Olds, in whose presentation, Senator Aiken's remarks lost nothing of their force and clarity, Prime Minister George Drew of Ontario took occasion to endorse Senator Aiken's stand that the St. Lawrence project be approved without further delay.

The Senator's address urged all parties in the United States and Canada to disregard the petty and unfounded prejudices of obstructionists and to rally to the support of an undertaking that would redound to the future advantage of both countries and bring immediate and far-reaching benefits to 50,000,000 people. "Looking into the future," said Senator Aiken, "we cannot help but see that the position we hold in the economic world will depend largely upon adequate transportation facilities and on adequate supply of low-cost electric energy."

To develop deep sea navigation of the St. Lawrence, he stated, it would be necessary to construct a great dam which would harness 2,200,000 horsepower of electric energy. The St. Lawrence, the Senator pointed out, would generate more electrical energy than was produced by the entire Tennessee Valley Authority during the year 1944. It would produce three times the power that could be generated at the great Dneiper Dam in Russia. It would, in fact, be one of the greatest sources of cheap electrical energy in all North America. And the cost of generating it would be only about one mill per kilowatt-hour.

Speaking of the importance of the development of



Senator G. D. Aiken

waterways and electrical energy as a factor in national defence, Senator Aiken drew attention to Germany's complete rural electrification and well-developed system of canals, without which aids "she would have been knocked completely out of the war long ago."

National Safety Emphasized

"The completion of the Great Lakes—St. Lawrence Seaway," said the Senator, "will have a most far-reaching effect upon the expansion of our peace-time pursuits as well as providing a greater degree of national safety for both our countries in the event that we again become involved in world-wide hostilities.

"Let us say to those at home who speak so reverently of a static economy—'You shall not block new developments which make for national security and economic prosperity for all our people.'"

On the American side of the river, within economic transmission distance of the proposed dam, there were 135,000 farms and other rural homes still unserved with electricity. Not only could light and power be extended to these homes, but it would be made infinitely cheaper to those who already had it.

"I cannot see how Canada can fail to be one of the greatest beneficiaries of the St. Lawrence development," declared the Senator, "as it becomes possible for the over-crowded centres of the world to decentralize, a great amount of business will be created for all. There should be increased production from the farms, the mines and the forests. There should be increased commerce developed between the far corners of this earth and interchange of goods and materials which up to now has been unknown or little realized."

The developments planned on the St. Lawrence, Senator Aiken said, would greatly expand the industries that depended upon a large supply of low-cost electricity. Electricity would also brighten the homes and lighten the labours of farm people. From an employment point of view, the benefits to be derived from the undertaking could not be too strongly emphasized. There would be thousands and thousands of jobs, not only during the construction of the seaway, but after its completion.

"We cannot let the progress of fifty million people be obstructed because a few do not want to change their way of doing business," declared the Senator. "We can no longer tolerate policies of scarcity and high prices. These policies inevitably lead to distress among our people and to war among nations."

The governments of Canada and the United States had long recognized the advisability and the ultimate necessity for completing the development of the greatest of all inland waterways. Negotiations between the two countries had been going on for many years.

Senator Aiken referred to the Boundary Waters Treaty of 1909 as fully contemplating the eventual development of

the St. Lawrence river and the completion of the seaway. In the late 1920's a most comprehensive survey of the Great Lakes-St. Lawrence Waterway was made, with the result that, in 1932, the two countries entered into a treaty providing for the completion of the waterway.

"Ratification of a treaty requires a two-thirds vote of the United States Senate," Senator Aiken explained. "Opponents of the seaway were powerful enough in 1934 to so obstruct the treaty that it failed to receive the required vote, although it did get a substantial majority. Had the treaty been approved at that time, the great resources of this mighty river and waterway would have been available for use during this war."

In March, 1941, the governments of Canada and the United States again reached an agreement providing for the St. Lawrence development.

Said Senator Aiken: "The President, the Secretary of War, the Secretary of the Navy, and virtually every high government official pleaded with the Congress of the United States to approve construction of the seaway so that it might be ready for use when war came. Opponents again brought all their strength to bear, even when the security of their country was threatened.

Adopted Delaying Tactics

"They adopted delaying tactics this time and successfully postponed a vote on the bill, which would have approved the agreement, until after Pearl Harbour, when the shortage of man power and material precluded the start of this development."

In 1943 Senator Aiken and Congressman Pittenger of Minnesota had introduced bills for the approval of the St. Lawrence agreement, but again they had fallen into the hands of a hostile committee, and they had been unable to secure hearings for them.

In December, 1944, a bill providing for the development of certain rivers and harbours had come before the Senate of the United States for action. In order to invite discussion Senator Aiken and his colleague had proposed the St. Lawrence agreement as an amendment to this bill.

"We had no expectation of getting the St. Lawrence development approved by this means," he explained, "but we did debate it for several days on the floor of the Senate. As a result of the publicity received, the people of the United States now know what the St. Lawrence Seaway and Power Project is, and there is an ever-increasing popular demand that the Congress approve this Development as a post-war project."

Senator Aiken went on to say that a bill would be re-introduced during the present session of the Congress. Its passage, however, would not be urged until the tension in the European theatre of war had been eased and the people were focussing their attention on a post-war world.

"The President of the United States has given his full approval to the St. Lawrence Seaway," concluded Senator Aiken. "The titular head of the Republican party, Governor Thomas Dewey of New York, also earnestly urges the project. Thus the heads of the two great political parties in the United States are very much in favour of this development, although I must confess there are lesser men in both parties who are opposed to it. With public opinion mounting, and the necessity for providing work and opportunity for our returning servicemen in mind, I am

very optimistic that the St. Lawrence development will be approved by the United States Congress in the not too distant future."

In proposing a vote of thanks to Mr. Olds for his presentation of Senator Aiken's address, Prime Minister George Drew pointed to the common heritage enjoyed by Canada and the United States—the English language—which made it easy for the two countries to co-operate in undertakings of mutual advantage.

"Sometimes," remarked the speaker, with a smile at Mr. Olds, "it is difficult from his speech to tell which side of the border a man comes from."

There had been a great deal said about the three thousand miles of undefended border between Canada and the United States and of the principle of "live and let live" which had subsisted between the two countries for so long a time. This was not only negative talk: it was outmoded. The spirit of the times, as indicated by the closely-linked war efforts of the Allies, was one of active co-operation where common interests were concerned.

Prime Minister Drew went on to show by apt allusions that it was more of the positive concept and less of the negative concept of the good-will relations between the two countries that was to be desired. And surely there was no enterprise which would contribute more to the common welfare of Canada and the United States than the planned developments on the St. Lawrence.

"I should be happy," the Prime Minister continued, "to go to the United States and speak of a great development of peace, and to be able to say that Canada and the United States had carried out the greatest joint development ever undertaken by two countries in the history of the world. And that is exactly what the St. Lawrence waterway project will be."

No Justification For Objections

The objections to the undertaking, said Colonel Drew, had no justification whatever. The development of new means of transportation had always been opposed by one interest or another. The airplane, the railway, even the stage-coach had been opposed.

"The truth is," he said, "that neither the railways nor any other means of communication in Canada—I cannot speak here about the United States—will suffer by the development of this new waterway communication."

Colonel Drew then went on to speak of the great new sources of electrical power that would be tapped by the St. Lawrence development. The Hydro project involved would be three times as big as that undertaken by Russia on the Dneiper. It would turn loose in this province alone an energy equivalent to 11,000,000 men working 24 hours a day. And it would benefit everybody, including the railways.

Work on the St. Lawrence development, the Prime Minister said, would provide employment for thousands of men at the cessation of the war—at a time when it was most needed—and it would give an up-lift and stimulus to industry.

"But plans must be made now," he warned. "It is very important that a decision should be reached very soon as to whether or not this important undertaking is to be carried out." "Yes," he repeated, "it is very important that a decision should be reached very soon."

"Seein's Believin'!"



MARGARET ROBERTSON holding in space a fluorescent glow lamp, lighted by the surrounding high frequency electric field. The group on the left are watching the high voltage testing of insulating oil and rubber gloves.

JN much the same way as wizardry captures the imagination of a theatre audience who try to follow and fathom the adroit movements of a magician as he causes uncanny things to happen before their eyes, over four hundred people witnessed demonstrations which had all the appearance of magic when they visited the Commission's laboratory on January 31 and February 1.

The occasion, an "Open House" for the benefit of relatives and friends of the laboratory staff, was arranged under the direction of W. P. Dobson, chief testing engineer.

These people saw many things which, to a layman, are strange and mysterious. There were demonstrations with electronic devices; electric eyes which blinked and clicked as one passed a small ray of light; fluorescent lamps which provided brilliant illumination although not attached to any wires; X-rays which revealed the secrets of a lady's purse and other equally arresting features.

Back of all this "magic", was revealed the vital char-

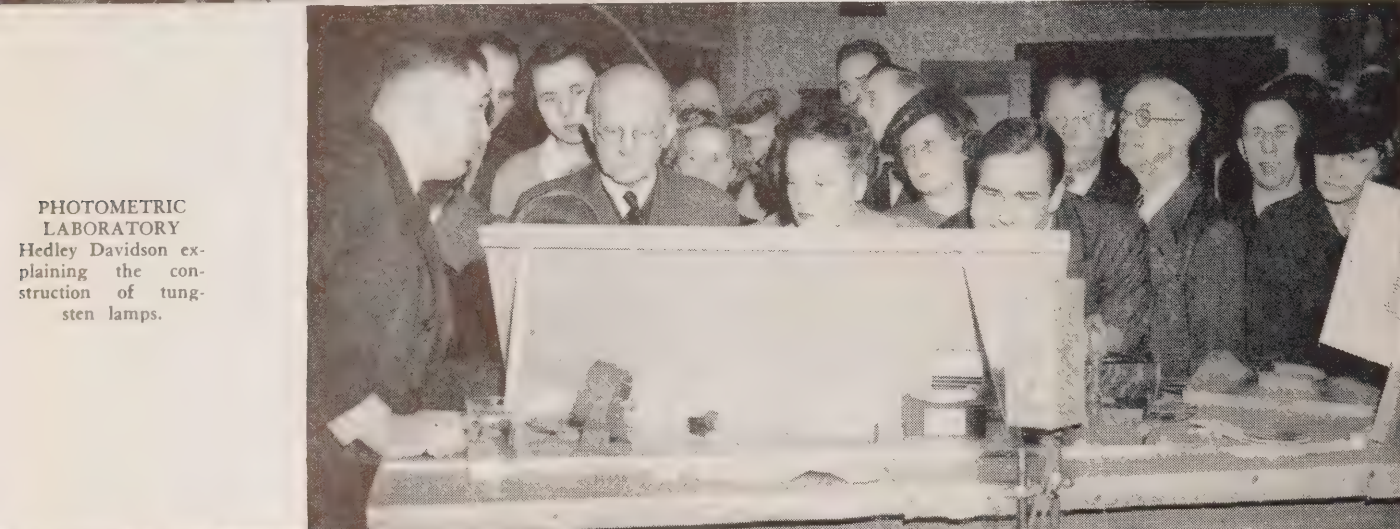
acter of the work which is being done in the various sections of the Commission laboratory—work which is closely linked with the efficient day-to-day operations and functions of Hydro in serving the people of the province.

One noteworthy factor in the success of the "Open House" event was the precision-like smoothness with which the visitors were grouped and conducted through the "house of magic" from the moment they checked their coats until they marched into the cafeteria for coffee and sandwiches. Each group moved from section to section at the sounding of a bell, and, as a result, streamlined demonstrations were given in a minimum of time.

Mr. Dobson and the members of his staff were congratulated by the visitors upon the arrangements which were made for the occasion.



**ELECTRONICS
LABORATORY**
J. W. Speight demon-
strating various in-
teresting electronic
devices.



**PHOTOMETRIC
LABORATORY**
Hedley Davidson ex-
plaining the con-
struction of tung-
sten lamps.



**APPROVALS
LABORATORY**
W. Jacques empha-
sizing the importance
of approval of de-
vices for the use of
the public.



**SEEING THROUGH
IT**
Douglas Storey
demonstrating the be-
haviour and use of
X-rays (and reveal-
ing the contents of a
lady's purse).

"CHECK YOUR hat and coat, Sir?" The beginning of the trip through the magic halls.



JOURNEY'S END
With refreshments in the cafeteria.

SISTERS OF THE SKILLET
Mrs. Charlotte Bell, chief chef (centre); Mrs. Nellie Guerin, left; Miss Queenie James, right, assistants.



ALL GOOD things come to an end, and there were lots of good things at the end.

HARNESSING HORSEPOWER

TEN THOUSAND horsepower—"before" and "after." Left: looking up Ragged Rapids on the Muskoka river, near Bala, before the construction of the development. Right: From the same point, after construction of the powerhouse, sluice gate, log slide and wing walls.

Hydraulic Design of a Hydro-Electric Plant

By S. W. B. Black

Assistant Engineer, Hydraulic Department

NATURE has endowed the Province of Ontario with many rivers, rapids and falls, with a potential capacity of about 9,000,000 horsepower. To date 2,675,000 horsepower has been developed, leaving a balance of approximately 6,325,000 horsepower as a future heritage. It should be recognized, however, that not all of this amount of power is capable of economic development. It is safe to assume, however, that there still remains 5,000,000 horsepower which can and, some day, will be put to work.

About one half of this undeveloped power is located in Southern Ontario, south of Lake Nipissing, and the other half is well distributed over the vast areas of Northern Ontario. In Southern Ontario, power is used principally in our factories, farms and homes, while in Northern Ontario the primary uses are for the development of mines and forests. The hydraulic engineer is charged with the conservation and economic development of these water powers for the benefit of the people of Ontario.

Previous articles in this series have described, in some detail, geological and water supply factors, surveying and investigation of power sites, and the planning necessary to determine the relation between available power and the power market. It is, therefore, assumed that a particular site requiring development has been decided upon and authorization has been received to proceed with the design and construction of the plant.

Generally speaking, there are two types of hydro-electric development—high head and low head—and the division between these two types may be set at approximately 60 feet. Three principal factors govern the economic cost of development: the available flow (usually stated in cubic feet per second), the gross head (the difference in elevation between the upper level at the dam and the lower level at the power house), and the topography of the site. It will be evident then that where there is a site with good water

THIS is the sixth in a series of articles which outline step-by-step, the work involved in the building of a power plant from the time a site is selected until the electricity is available in homes and factories that may be located hundreds of miles away.—The Editor.

supply and high head combined with favourable topography, a very economical development can be expected.

The first step in the design of the plant is to assemble all data and information available. Over the past thirty years many surveys have been made by the Commission on the important power rivers of Ontario, and a large amount of data has been assembled, including available heads and flows. Alternative schemes of development for the site are now studied intensively and then the hydraulic, electrical and construction engineers visit the site, to see at first hand the advantages and disadvantages of these alternatives. After carrying out further studies, a definite scheme of development is decided upon, although additional field information will probably be required before the various structures and channels can be located in their most advantageous position.

As stated before, the principle of conservation of power resources, within economic limits, must receive first consideration. At some sites practically the total head can be made available at the power house, as at Chats Falls, while at others the distance the water has to travel between the farthest upstream works or intake and the power house, as at our Queenston plant, may result in a substantial amount of lost head which is not economical to obtain.

For major structures, such as dams and power houses, the location resulting in the minimum cost for the structure is usually the deciding factor. The height of the dam, which fixes the head-water level, is an important factor and is given careful consideration. Flooding damages and additional cost of the dam itself may become large factors. Moreover, too high a head-water level may result in a reduction of head at the next site upstream. Water conveying channels and pipe lines, such as canals and penstocks (pipe lines leading from the head works to the power house) receive economic study. The head lost in friction, translated into power, is balanced against the cost of the channel or pipe line.

With the total capacity of the site fixed, a selection of the number, and consequently the capacity, of the individual units is given consideration. Generally speaking, the larger



S. W. B. Black

the units, the lower the cost per horsepower of the turbines and the power house. Often an even number of units is installed to effect a saving in auxiliary equipment.

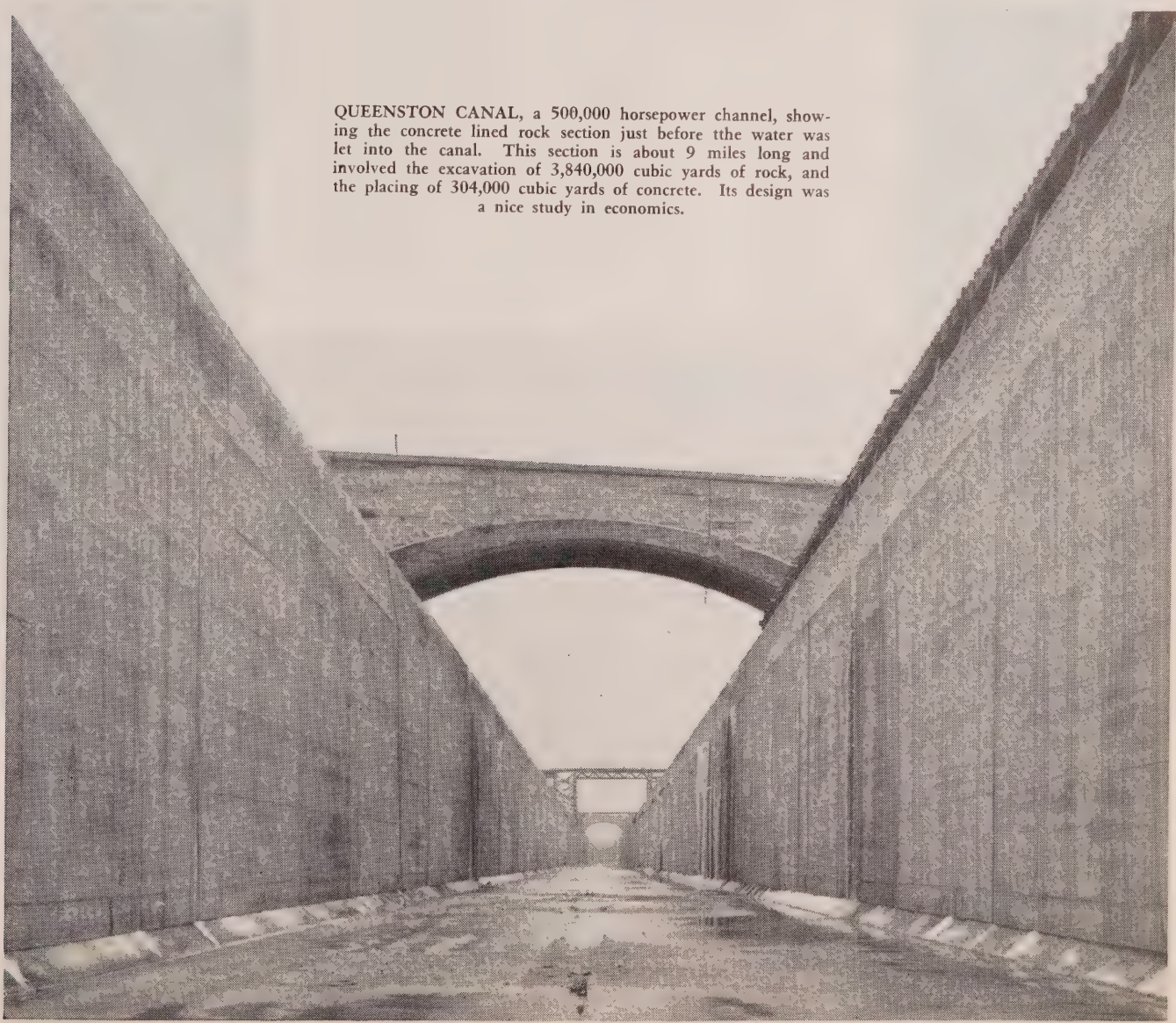
In some instances, before proceeding with the detailed design of hydraulic works, it is found advisable to conduct model tests of certain structures to determine their characteristics. These tests are usually carried out in a hydraulic laboratory, but in some cases, like the Chippawa intake, large scale models are constructed in the field.

With most hydro-electric developments a dam to raise and control the head-water level is required, although this structure may be built as an extension to the power house in some instances. The dam is designed to satisfy the requirements of stability against water pressure, ice thrust and up-lift on the base. It must be able to pass the maximum flood flow with safety. Dams may be of concrete, earth-fill or timber-crib construction, the choice of materials depending upon local conditions in most instances.

The head works or intake to the water passages leading to the turbines may be located in the dam structure, or may be an integral part of the power house sub-structure. It is usually of reinforced concrete construction and contains steel racks to prevent trash from entering the turbines, and head gates to shut off the flow of water to the units.

Pipe lines or penstocks frequently are required to convey the water from the head works to the power house. They may be of steel plate, reinforced concrete or wood-stave pipe. Each type has its own particular use and advantage, both with regard to cost and availability of materials. The penstocks are designed for the maximum internal water pressure which could occur, and a calculation of pressure rise resulting from the sudden closure of the turbine gates is required to determine their design.

With long pipe lines, a surge tank, located near the power house, is frequently used. This tank has two main functions—to supply water quickly to the turbine to enable



QUEENSTON CANAL, a 500,000 horsepower channel, showing the concrete lined rock section just before the water was let into the canal. This section is about 9 miles long and involved the excavation of 3,840,000 cubic yards of rock, and the placing of 304,000 cubic yards of concrete. Its design was a nice study in economics.



VIEW OF a corner of one of the Commission's draughting rooms, showing some of the draughtsmen at work on their several tasks. Note the bright and airy surroundings and the modern fluorescent lighting.

it to take up sudden increase in load on the unit, and to provide a reservoir for the rejected water when the load is reduced.

The power house substructure is one of the most important, and the most expensive, hydraulic structure in a hydro-electric development. It includes the scroll case water passages leading to the turbines, and the draft tubes which convey the water from the turbines to the tailrace, immediately outside the power house. The form of these water passages is usually given by the turbine manufacturer, and is developed after considerable experience with his own type of equipment. The draft tube's chief function is to recover as much as possible of the energy remaining in the water after it has passed the turbine runner. Numerous designs of draft tubes have been tried out in the past, but the present trend is to follow a more or less standard right-angled elbow type. The substructure also provides the foundations for the electric generators and for the superstructure, or building housing the generators and other electrical equipment. It is of massive, reinforced concrete construction and might be likened to a huge military fortification.

While some developments do not include canals or other water-conveying channels, there are others where these water channels may account for a considerable part of the cost of the whole development, such as at the Queenston development, where the canal from the intake at Chippawa to the powerhouse at Queenston, a distance of 13 miles, cost about \$45,000,000. In such an instance very careful study is given to the design of the canal to fix the allowable friction loss within economic limits. In comparison with this, is the DeCew Falls development, where there is a considerable distance between the power house on Twelve Mile creek and Lake Ontario. The economics of these tailwater channels are also investigated, as a lower tailwater level at the power house provides just

as much additional head on the turbines as does a correspondingly higher head-water level.

Frequently a log slide or chute is a necessary part of a development and forms an interesting feature of the plant design.

A hydraulic turbine is a machine for transforming the energy of falling water into mechanical power. There are the fixed parts, which contain and guide the water to the water wheel or runner and the rotating parts, which include the runner and shaft. Regulating the amount of water supplied to the runner are a number of gates, usually of the wicket type, and, controlling the operation of these gates is a hydraulic governor, to maintain the speed of the unit within narrow limits. For example, if more power is required from the unit, the rotating elements slow down perceptibly and the governor automatically opens the turbine gates to supply more water to the runner to take up the added load. This cycle is reversed when load is reduced on the unit.

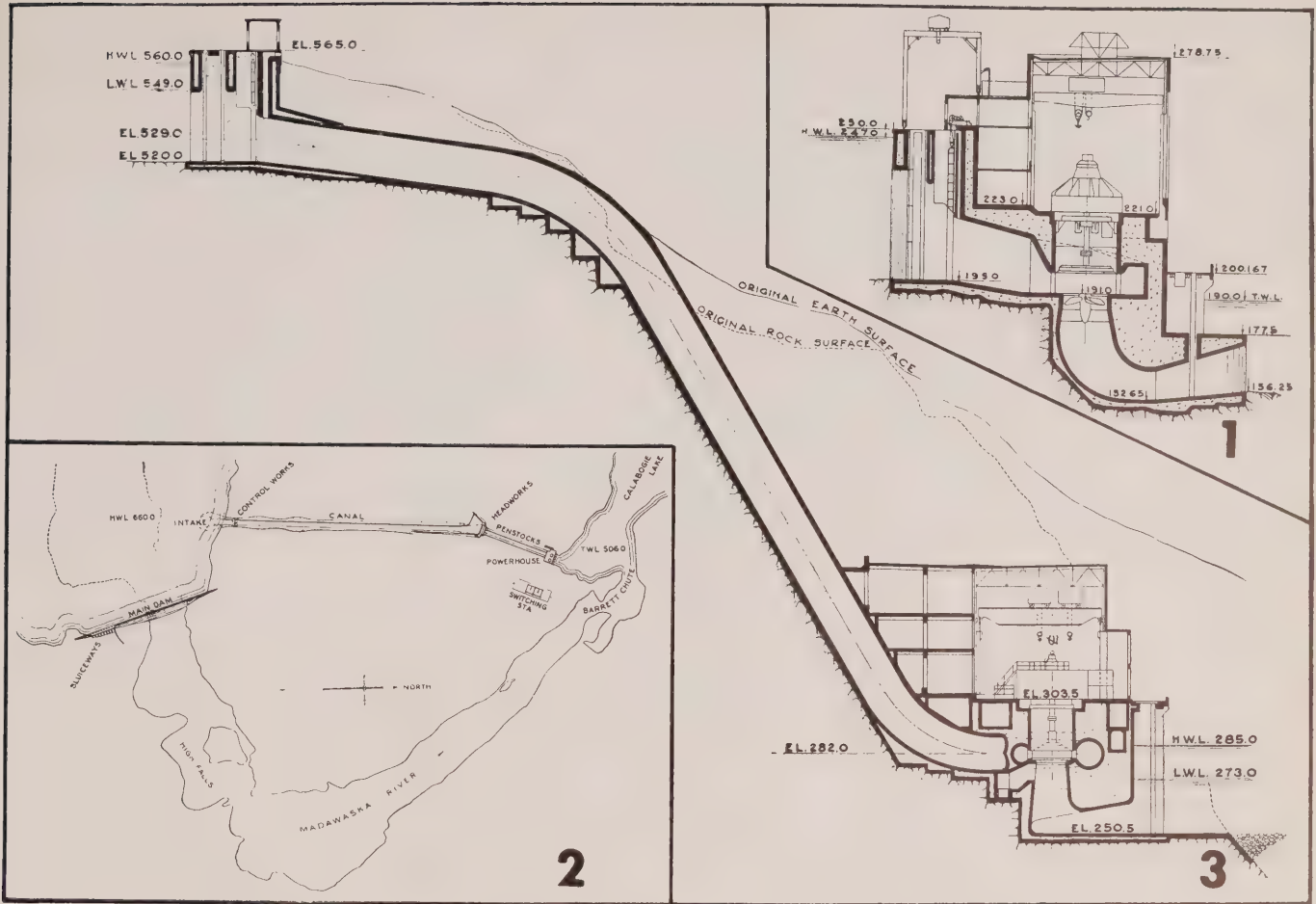
While the turbine manufacturer designs his own equipment, and guarantees its performance, specifications must be prepared by the hydraulic engineer, in order to obtain equipment to meet his requirements. For heads available in Ontario, turbines are of two general types, with Francis or bucket type runners for high-head installations (over 60 feet), or with propeller or blade-type runners for heads under 60 feet. A more recent development of the propeller type is the adjustable blade, or Kaplan runner. In this latter type, the runner blades are rotated on their axis, automatically, to obtain the maximum amount of power from the water under varying conditions of operating head and load on the unit. The hydraulic turbine is a highly efficient machine when properly designed and installed—the efficiency in some instances reaching 94 per cent, including draft tube recovery.

The supply of water to the turbine is controlled by head gates located in the head works at the upper end of a penstock, or by a valve located at the lower end of a penstock. The head gates are usually of structural-steel design with rollers attached, to enable them to be closed readily against the water pressure, in case of emergency. Hoists are provided to raise the gates, but the gates are lowered by allowing them to drop under brake control.

The two types of penstock valve commonly in use are the gate valve and the butterfly valve, which, as their

MODEL TEST of the Welland Vale weir of the DeCew Falls development, in the hydraulic laboratory of the University of Toronto. This test was required to check the discharge coefficient and to observe the effect of the downstream apron in dissipating the energy from 7,500 horsepower.





No. 1—CROSS SECTION of the Chats Falls powerhouse on the Ottawa River, a typical low-head plant, showing the substructure, turbine, generator and superstructure. From headworks deck level to draft tube foundations, is over 100 feet, the height of a ten-story building. This structure contains 85,000 cubic yards of reinforced concrete. Eight 28,000 horsepower units are installed, operating under 53-foot head.

No. 2—CROSS SECTION of the DeCew Falls development, a typical high-head plant, showing the headworks, penstock and powerhouse. This unit, of 65,000 horsepower capacity, under 265-foot head, the largest in the Commission's system, draws its water supply from the Welland ship canal at Allanburg.

No. 3—GENERAL ARRANGEMENT of the Barrett Chute development on the Madawaska river near Calabogie, showing the main dam, head canal, headworks, penstocks and powerhouse with two 27,000 horsepower units installed, operating under 150-foot head.

names imply, consist of a sliding disc in the first instance and a rotating disc in the second, to close off the flow of water. Other types of valves, such as the Johnson hydraulically operated valve, are also available and each type has its own particular use. While head gates and valves are also designed by the manufacturer, the hydraulic engineer must prepare the specifications covering this equipment also.

As previously stated, one of the functions of the dam in a hydro-electric plant is to provide for the discharge of flood flows. This is accomplished by the provision of sluice-ways or openings in the dam, the discharge through which is usually controlled by steel sluice gates or wooden stop-logs. Sluice gates are used where the space is restricted, or where quick action is required to handle sudden freshets. As these gates may be required to operate during severe winter conditions, they are usually supplied with electric

heaters to keep them free from ice. If stop-log sluices are used, a special type of spud winch is provided to place and remove stop-logs as required.

It is one thing for the engineer to determine the structures and equipment he requires, and another thing to have his ideas put on paper so that his vision of the completed plant may be consummated. This is where the designer and the draughtsman fulfil their tasks. The preparation of the plans for a hydro-electric power development requires a considerable amount of creative work on the part of the designer and of skill on the part of the draughtsman in producing the necessary plans. The Commission takes pride in the work turned out by its draughtsmen in the past thirty years, during which period twenty-four plants, with installations totalling about 1,000,000 horsepower, have been designed and constructed.

NORTH YORK



ABOVE ARE members of the North York Hydro-Electric Commission, from left to right: Benjamin Thackeray, acting manager and secretary-treasurer; Dr. Ralph P. Johns, chairman; Roderick Brown and reeve George H. Mitchell, commissioners. Absent is superintendent Clement H. Proctor, on active service with the R.C.A.F. The illustration on the right shows a section of the busy North York Hydro office.



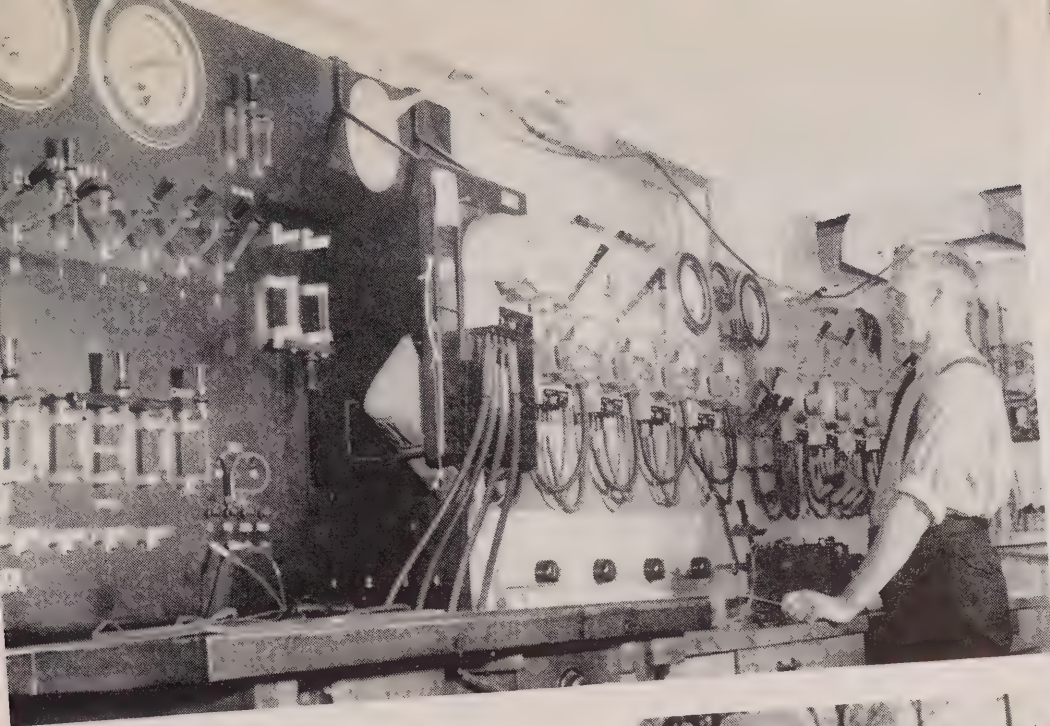
JUST over a century ago, a short distance from where the North York Hydro office now stands, the sound of pistol shots and musket fire filled the air as inflamed Rebels and Loyalists clashed in the rebellion of 1837. When the smoke of the skirmish had cleared away, the mud of Yonge Street was stained with blood. An old house in the area, now the site of the club house at St. Andrew's golf course, served as a refuge for some of those who took part in the episode.

Standing in the shadow of these historic events, North York township today is a modern, thriving centre of 26,000 population, and according to Federal statistics one of the fastest-growing suburban municipalities in the Dominion. Property development in the township has averaged approximately three million dollars annually

during the past six years.

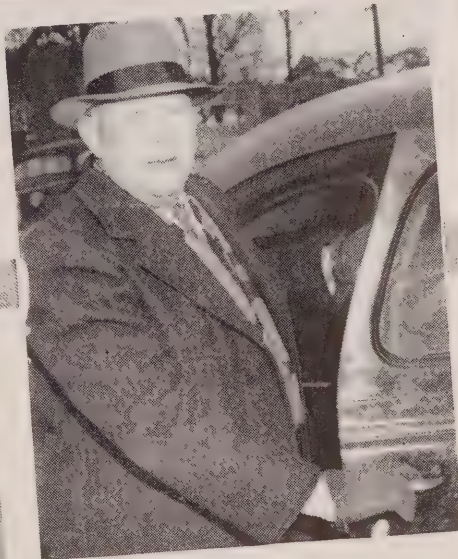
The official history of the district began with the establishment of townships in 1793 by Colonel John Graves Simcoe, first lieutenant-governor of Upper Canada. York township was at that time designated as Dublin, while the present township of Scarborough was known as Glasgow. The only recent trace of the name Dublin was found in Dublin school, on the Lansing side road between Bathurst and Dufferin streets. Within the past year it has been replaced with a new model school. The main business thoroughfare, cutting through the heart of the township, is Yonge street, named by Governor Simcoe in honour of his devoted friend, Sir George Yonge, who

(Continued on page 22)



METER TEST board of the North York Hydro-Electric Commission (above), with "Ed" Kelly in attendance.

GEORGE WATSON, foreman (right) sets out to look things over.



"STOCKING UP" for a day's work is Jack Smith (below).



LOWER LEFT photo shows North York Fire Hall.

LOWER RIGHT is shown North York Township Hall.





THIS STRIKING brick building is the centre of Hydro activity in North York township. Its clean-cut appearance typifies the spirit of progress in the municipality.

(Continued from page 20)

was at that time secretary of war in the British Imperial Cabinet.

North York township was created as a separate municipality in 1922, when York township was subdivided, and the local Hydro commission was established in the same year. In the intervening years the township has developed rapidly. With approximately 50 industries in the area, including 12 war plants, there has been an influx of more than 5,000 new residents since the outbreak of war in 1939. The forward trend has been reflected in the increasing load demands made on the Hydro system, which serves approximately 12,500 horsepower over its 145 miles of transmission line. With seven substations throughout the municipality, the Hydro utility supplies the electrical needs of 7,400 consumers, made up of 7,000 domestic users, 350 commercial and 46 industrial.

The leading industrial consumers served by the North York Hydro-Electric Commission are the DeHavilland Aircraft plant, Massey-Harris Company and Connaught Laboratories, all of whom are engaged on war work of a vital character, while electric power is being supplied for the construction of the new Sunnybrook Hospital for disabled war veterans. Upon completion of the building, its needs will also be supplied by the North York utility.

Members of the original North York Hydro-Electric Commission were R. F. Hicks, reeve; R. S. Risebrough and F. Danby, commissioners; H. D. Goode, secretary; and Thomas Jackson, superintendent. The present administration is composed of Dr. Ralph P. Johns, chairman; Reeve George H. Mitchell, M.L.A., and Roderick S. Brown, commissioners; Benjamin Thackeray, acting manager and secretary-treasurer. Clement H. Proctor, superintendent, is on leave of absence to the Royal Canadian Air Force.

The imposing North York Hydro office is a familiar sight to those who travel Highway No. 11. A modern, clean-cut structure, it typifies the spirit and progressiveness of one of Ontario's younger municipalities.

Yonge Street has been the centre of interesting events. First surveyed in 1793, actual construction on the road began about 1795, with a view to serving a double purpose. It was to provide a good military road and short cut through

to lake Huron and also to encourage settlers. The short cut to lake Huron was made by a 33-mile portage to the Holland river, running into lake Simcoe; by boat across lake Simcoe to a point in the vicinity of Barrie; from here, by another portage to the Severn river, and then by way of the Severn into Georgian Bay or lake Huron. At that time there was a military depot and naval base at Penetanguishene on Georgian Bay.

The first settlers to come in over the new road was a group of sixty German or "Pennsylvania Dutch" families, who came from the United States and settled in what is now known as the township of Markham. These people proved to be excellent pioneers and a credit to the district. They told of their harrowing experiences over the new road, of the hills being so bad that they attached ropes to their wagons, snubbed them around trees to keep the heavy loads from running ahead upon their oxen. Many stories have been handed down of the animals that roamed the district at the time, including large numbers of wolves. One settler recounted that after clearing the land of his wheat veld, he went out one morning and found twenty-five deer grazing contentedly upon it. Wild turkey was also found in abundance, some of these birds weighing as much as 30 pounds in the fall of the year.

In 1832 Yonge Street was straightened through Hogg's Hollow, as it is today. Settlement along both sides of the road had increased and a number of farms, grist mills and inns spread north for a considerable distance. At a certain time of year, Indians from the lake Simcoe and Georgian Bay districts came down to Toronto to receive money, blankets and goods from the British Government in payment for giving up their land to the white man. They presented a picturesque sight as they marched down Yonge Street in groups—fine specimens of manhood—attired in native costumes, their head-dress resplendent with eagle feathers.

Yonge Street became the backbone of York County. In 1896 the Metropolitan Electric Railway was built, running from Toronto to Newmarket. (At present it runs only to Richmond Hill.) The line proved to be of great benefit to the towns and townships to the north of Toronto and spurred development.

AROUND THE HYDRO CIRCUIT

MEET THE CHAIRMAN

DR. RALPH P. JOHNS, chairman of the North York Hydro-Electric Commission, has prescribed for himself a very busy programme. In addition to his Hydro activities, which extend over the past ten years, he also acts as York County coroner and is closely identified with the R.C.A.F. Air Cadet movement.

Born in 1907 at Thornhill, Ontario, where his father practised medicine for 25 years, Dr. Johns attended Richmond Hill High School and took his degree at the University of Toronto.

With his colleagues on the commission, the chairman is guiding the steady growth of Hydro in North York.

CRICKET ENTHUSIAST

BENJAMIN THACKERAY, acting manager and secretary-treasurer of the North York Hydro-Electric Commission, has to his credit an imposing record of war service. Enlisting with the British Army in 1914, he served in France, Egypt and Mesopotamia, and in 1918 was transferred to India, where he saw service with the Indian Army until 1920. Upon appointment as acting manager of the North York Hydro in 1944, Mr. Thackeray retained the post of secretary-treasurer, which he has held since 1929.

While cricket dominated his athletic agenda in college days, he is now a devotee of fishing and golf.

HAILS FROM ST. JOHNS

If **RODERICK BROWN** had to name the most important city in the world, he would say St. Johns, Newfoundland, which he remembers as his birthplace in 1907. Educated in St. Johns and Toronto, Mr. Brown has served for the past five years as North York Hydro commissioner. In business he is engaged as railway ticket agent.

Leisure time doesn't hang heavily on the commissioner, as he turns to carpentry and farming for "relaxation."

LADIES' ANNUAL BRIDGE

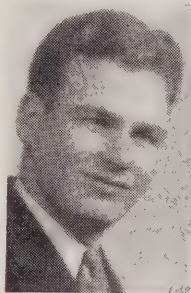
PROCEEDS from the ladies' annual bridge, which is to be held at the Royal York Hotel, Toronto, on April 7, under the sponsorship of the Ontario Hydro-Electric Club, will again be used to swell the Consolidated War Services Fund.

Margaret Gahagan, convener, announces that there will be individual table prizes, as well as lucky number draws. Other members of this committee are: Helen Dunlop, secretary; Mary Jane Oulahan, treasurer; Dorothy Fromow, Bruce Irvine, Marie O'Rourke, Nora Chambers, Winnifred Walker, Eunice Wands, Winnifred Wallace, Margaret Robertson, Rhoda Browne, Edith Thomas, Jean Hall, Thelma Jenner, Nancy Watt, Olive Bell, Therese Dillon and Lorraine Gauthier.

SERVING WITH R.C.A.F.

CLEMENT H. PROCTOR, superintendent of the North York Hydro-Electric Commission, is at present on leave of absence to the Royal Canadian Air Force. Born in Toronto in 1909, and educated in Toronto and Richmond Hill, Mr. Proctor joined the North York Hydro staff 16 years ago. He rose to the position of superintendent a short time before enlisting.

A stellar athlete, "Clem" excels in hockey, lacrosse and baseball.



"HUNDRED-YARD" MAN

GEORGE H. MITCHELL, M.P.P. and reeve of North York Township, has served four years on the local Hydro commission. A builder by trade, Mr. Mitchell was born in 1889, educated in Derbyshire, England, and served in the Great War. He enlisted in 1915, served in France and Belgium with the 4th Infantry Battalion, and was wounded twice. Entering municipal life in 1940 as deputy reeve, Ward 3, Mr. Mitchell was elected North York Township Reeve in 1941 and became a member of the Ontario Legislature in 1943.

In the athletic days of his youth, the North York commissioner was equally at home on the football field or the cinder path. His sprinting time of 10-3/5 seconds for "the hundred" made him a hard man to catch.

GEORGE A. SAUNDERS DIES

Formerly of the Commission's electrical engineering department, **GEORGE A. SAUNDERS**, 69, died on March 5, following a stroke, at his home, 88 Hilton Avenue, Toronto.

A native of Petrolia, Ontario, Mr. Saunders retired recently after having served for 33 years with the Commission where he had charge of distribution station design.

He was a graduate of the University of Toronto and had been identified with the General Electric Company, Schenectady, and the Westinghouse Electric Company of East Pittsburgh, before joining the Commission's staff.

Surviving are his widow, Edith A. Saunders, and a brother, Henry W. Saunders of Bramwell, West Virginia.

PRESUMED DEAD

THOMAS RUSSELL MARTIN, R.C.A.F., formerly of the H.E.P.C. operating department, who has been missing since May, 1944, is now presumed dead. At the time of enlistment in July, 1941, Mr. Martin was an operator-in-training at Leaside.



Hydro HOME FORUM

by *Edithemma Muir*
HOME ECONOMIST

EVERY PERSON who has ever dwelt in prewar England remembers the familiar cry of the street bun vendors on Good Friday:

"One-a-penny buns,
Two-a-penny buns;
One-a-penny, two-a-penny
Hot Cross Buns!"

Hot Cross Buns are yeast mixtures which are marked with a cross just before being placed in the oven to be baked. Years ago they were sold in baskets, all day long, by poor people—both young and old—except during church services, when they left their baskets just outside the vestry door.

* * *

In ancient times, according to superstition, these buns, baked on Good Friday, could be kept for a year without becoming mouldy, and a few gratings of the buns in water would cure any ailment.

In most countries to-day, yeast is used in the making of the bread cakes which we serve as traditional bread for Easter.

* * *

Everyone who tries yeast breads, especially for the holiday season, desires a "just-so" product. They'll turn out sweet in aroma, soft-toned brown in colour, spongy and thin of crust, fine white-grained of texture and delicious to eat, if you use a tested recipe along with these important general directions:

1. Scald all liquids to destroy micro-organisms which might interfere with the action of the yeast.

2. Add fat, sugar and salt to the hot (steaming, not boiling) liquid and let it cool until it is lukewarm.

3. Add yeast cake when it is thoroughly dissolved in lukewarm water to which a teaspoon of sugar is added.

4. Add the flour, which should be sifted before measuring.

5. The straight dough method is the simple one to use in the home. Add to the liquid-yeast mixture all the flour to be used and knead thoroughly until it no longer sticks to the board. Put the dough into a greased bowl large enough to hold at least three times the bulk of the dough. Grease top of dough and cover. Set in a warm place away from extreme heat or draughts. Let dough rise until three times its original size.

Remove dough to lightly floured board and bring top over the bottom and punch down. A second rising will improve texture and flavour of the baked product. Shape into rolls, stretch so that the tops will be perfectly smooth and the bottom seam well tucked in. Cover and set in a warm place to rise twice in size. Bake in a hot electric oven—425 degrees, for 20 minutes.

YOU WERE ASKING

Q. Why does milk sometimes curdle when used to poach fish?

A. Smoked fish may curdle milk. Simmer fish in water before it is poached in whole milk.

* * *

Q. What is parchment paper?

A. Butter wrappings are parchment. Use to wrap fish when cooking and it will prevent it from falling into pieces.

* * *

Q. Is it necessary to use lemon juice in the water to cook fish?

A. No. Use vinegar when lemons are expensive. Vinegar is an acid that keeps the flesh firm and white. It is not necessary to use it in the cooking of salmon.

* * *

Q. What would you use to substitute for fish during Lent?

A. We have only limited space, but suggest a few of the many cheese, egg, milk and lentil dishes.

EGGS: Creamed, curried, scrambled, souffle, stuffed with mushrooms, in ramekins with spinach or browned rice, vegetable custards, eggs with noodles.

CHEESE: Welsh rarebit, fondue, cheese salad, cheese soup, cheese and tomatoes scalloped.

MILK: Cream soups, cream sauces for vegetables, scalloped vegetables, French toast.

LENTILS: Baked beans, split pea soup, scalloped (dry) peas, lentil croquettes.

HINTS FOR HOMEMAKERS

Remove candle dripping by rubbing surface with soft cloth moistened with cleaning fluid.

* * *

To use a stairway which is being painted, do every other step; when dry, do alternate steps.

* * *

Keep nails, screws and such in glass jars where they can be seen.

* * *

Use a dry brush to clean corners that have been neglected for a while before you wipe out with a wet cloth.

* * *

Save your pen; use a match stick dipped in ink to address parcels wrapped in heavy, rough paper.

HYDRO MEN SAVE TWO LIVES BY ARTIFICIAL RESPIRATION

**Presentations Made By Wills Maclachlan To
Employees Of Toronto Hydro And
Keswick R.P.D.**

SEVEN HYDRO employees, who saved two lives by means of artificial respiration, received Canadian Electrical Association and National Safety Council citations and awards at a meeting of the Electric Club of Toronto on February 28.

Three of the employees, V. Lavoie, foreman, and W. Pogue and W. W. Brown, linemen, are with the Toronto Hydro-Electric System. The four other employees, J. D. Tate, foreman, C. E. Carpentier and Louis Lee, linemen, and Kenneth Kinch, a helper, are identified with Keswick Rural Power District.

Wills Maclachlan, secretary-treasurer and engineer of the Electrical Employers' Association of Ontario, in making the presentations paid high tribute to the men for their prompt, heroic and efficient efforts.

The citations showed that on August 14 of last year, the Toronto Hydro employees had saved the life of William Osborne, a fellow lineman, who was rendered unconscious and who was not breathing, following an electric shock.

The Keswick employees saved the life of Miss Elise Simon of Toronto who was under water for five minutes in Lake Simcoe on August 2 of last year. After she had been brought ashore, the four members of the Keswick Hydro gang continued artificial respiration for over two hours, when Miss Simson was able to breathe again.

William Johnston of Hamilton, who dived in and brought the girl out of the water, was presented with the President's Medal of the National Safety Council in January.



C. E. SCHWENGER, distribution engineer, Toronto Hydro-Electric System, accepts from Wills Maclachlan the Canadian Electrical Association Resuscitation Medal awarded to the Toronto Hydro line crew. Miniature replicas were presented to (standing in background) V. Lavoie, W. M. Pogue and W. W. Brown. Seated at table to left of Mr. Schwenger is T. N. Dean, Workmen's Compensation Board, guest speaker at Electric Club luncheon.



WILLS MACLACHLAN, president of Electrical Employers' Association of Ontario, is shown presenting National Safety Council certificates of assistance to employees of the Keswick rural power district, H.E.P.C. Standing, left to right, are Kenneth Kinch, C. E. Carpentier, and J. D. Tate.



GROUP PHOTOGRAPH taken at Electric Club luncheon, Royal York Hotel, Toronto, on February 28, when presentations were made to Hydro employees for the saving of two lives. In the group are, from left to right: C. E. Carpentier, Lewis Lee, Kenneth Kinch (now University of Toronto medical student), and J. D. Tate, Keswick rural power district, H.E.P.C., all of whom received National Safety Council certificates of assistance; E. R. Lawler, district engineer, H.E.P.C., and C. E. Schwenger, chief engineer of Toronto Hydro-Electric System and president, Electric Club of Toronto. The next three V. Lavoie, W. M. Brown and W. M. Pogue, Toronto, Hydro employees, received miniatures of the Canadian Electrical Association Resuscitation Medal.

Lighter Lines



"NOW I'll tell you something about
YOUR future, bud!"

Says Billy the Benedick: "You bachelors may think you know all about women, but you won't hear the truth about yourselves until you get married."

* * *

Smith: "They tell me Booswell has quite a good voice. Is he cultivating it?"

Jones: "I wouldn't know about that. But he certainly irrigates it frequently."



"I don't see why you couldn't paint the
back porch for a hobby."

"Have you had any experience in defense work?" asked the Selective Service interviewer of the young girl applicant.

"I'll say I have," replied the Y.G.A. "I've been going for more than a year with a sailor."

* * *

When a coloured maid was asked if she were going to hang up a sprig of mistletoe for Christmas, she replied:

"Deed I isn't. I done got too much pride to advertise for de ordinary cou'tesies any lady have a right to expect."



"To my brother I leave my secretary who has all my money, red points, 'C' book and a carton of cigarettes!"

Fond Mother (to young son): "Whose little tweedle-deedie, tummy-wummie boy are you?"

Young son (disgustedly): "You don't mean to tell me, mother, that you don't know whose child I am."

* * *

Statistician: "Now, Mr. Gould, I should like to ask you what you consider to be the chief factors in the re-distribution of wealth."

Mr. Gould: "My wife, my daughter, and my son."



"We'll visit you every day. It's warm
in here!"

Despondent Hick: "My grandfather had a farm. My father had a garden. And now I've only got a can-opener."

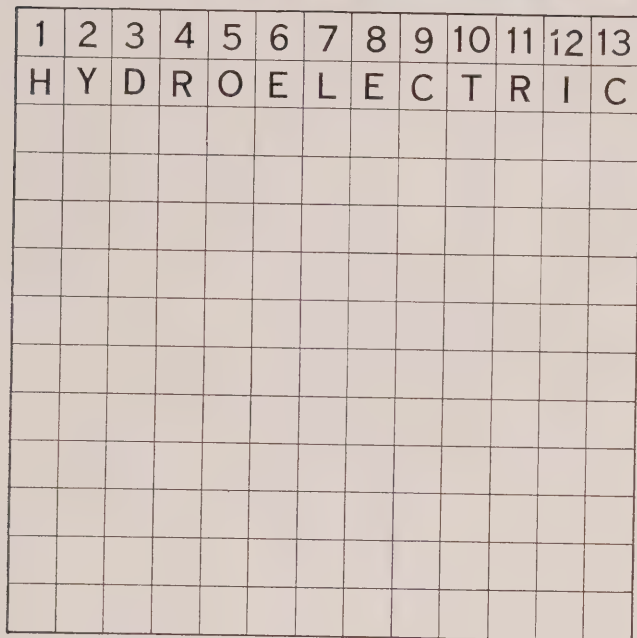
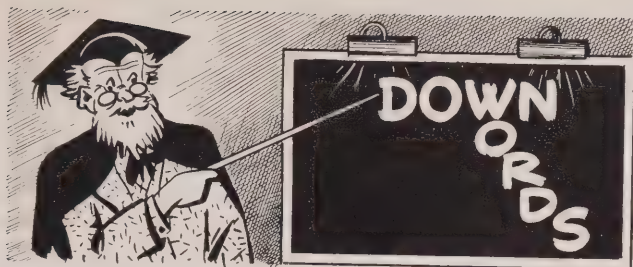
Progressive Farmer: "My grandfather had a clearing. My father made it a farm. And now I've got Hydro."

* * *

A worried reader is anxious to know where Herr Hitler and his pirate crew are going when they find that "it's all up." Our answer would be that they are all going down.



"I want to learn a foreign language—
I talk in my sleep!"



THIS puzzle, promulgated by Professor Peter Perplexus, is designed to get any word wizard "down" in both a literary and literal sense.

A public-spirited citizen who is as keenly interested in Hydro as he is in hybrids, he has selected "Hydro-Electric" as the key words for his first puzzle.

"You can't get crossed up on this one," he chuckled, "for it's a Downwords Puzzle. The key words already mean a great deal to this province's progressive people, but those who solve this puzzle will find that they mean a lot more."

What the Professor means is that this is not a crossword puzzle. It's a Downwords Puzzle. Each of the thirteen letters which make up the key words across the top row of squares is the first letter of a twelve-letter Downword.

Definitions of the thirteen selected Downwords to be filled in are given below opposite their respective numbers. Each Downword must conform in meaning to the given definition. The correct solution will be given in the next issue of Hydro News.

A perfect score means A 1 at Words; ten to twelve right and you're among the Bluebloods of Downwords; from six to nine right means the green light and a pass from the Professor; a score of from three to five means you're in the red; two or less and the Professor rules that the gray matter is temporarily off colour.

DEFINITIONS

- | | |
|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|
| 1. This great mammal is no beauty. He lives by the rivers of Africa. | 1. not much latitude here! |
| 2. Name of a bird. First part is colour; the second a carpenter's tool. | 8. What this puzzle aims to be. Of course, we may be wrong! |
| 3. Means to break up. The German army may soon do this. | 9. Good description of the state of affairs in Berlin at present. |
| 4. A word used these days in connection with return of service men and women to Civvy Street. | 10. This word is well in line with Hydro, as it were. |
| 5. This is just highbrow for showy. | 11. A cooler but not the kind to which one would be sent for 30 days! |
| 6. What you feel at Junior's fifteenth question when you're trying to read the paper. | 12. This is really quite a bright word. Definitely linked with Hydro. |
| 7. Pertaining to length. Definitely | 13. What Germany should be considering now. |

SOUTHERN ONTARIO SYSTEM

EMBRACING NIAGARA, GEORGIAN BAY AND EASTERN ONTARIO
DIVISIONS

HORSEPOWER

PRIMARY LOAD

1945
1944
1939

2.500.000

2.000.000

1,500,000-

1,000,000-

500,000-

JAN. FEB. MAR. APR. MAY JUNE JULY AUG. SEPT. OCT. NOV. DEC.

PRIMARY LOADS

AREA SERVED BY	MAXIMUM 20-MINUTE PEAK H.P.		PER CENT INCREASE
	JANUARY, 1945	JANUARY, 1944	
SOUTHERN ONTARIO SYSTEM . .	2,051,930	1,989,410	+ 3.1
THUNDER BAY SYSTEM	123,458	123,861	- 0.3
NORTHERN ONTARIO PROPERTIES	191,746	186,984	+ 2.5
TOTAL	2,367,134	2,300,255	+ 2.9

PRIMARY AND SECONDARY LOADS

SOUTHERN ONTARIO SYSTEM . . .	2,096,387	2,094,102	+ 0.1
THUNDER BAY SYSTEM	130,027	130,295	- 0.2
NORTHERN ONTARIO PROPERTIES	<u>261,004</u>	<u>189,974</u>	+ 37.4
TOTAL	2,487,418	2,414,371	+ 3.0

MUNICIPAL LOADS, DECEMBER, 1944

SOUTHERN ONTARIO SYSTEM

NIAGARA DIVISION

(25-Cycle)

	H.P.	Popula- tion		H.P.	Popula- tion		H.P.	Popula- tion
Acton	1,730	1,903	Erie Beach	7	21	Palmerston	647	1,400
Agincourt	244	P.V.	Essex	574	1,886	Paris	2,060	4,604
Ailsa Craig	142	487	Etobicoke	9,120	V.A.	Parkhill	228	1,029
Alvinston	137	649	Exeter	802	1,654	Petrolia	1,023	2,768
Amherstburg	1,058	2,704	Fergus	1,340	2,759	Plattsville	154	P.V.
Ancaster Twp.	487	V.A.	Fonthill	210	860	Point Edward	1,835	1,199
Arkona	65	403	Forest	612	1,562	Port Colborne	1,916	6,928
Aurora	1,385	2,821	Forest Hill	8,344	12,172	Port Credit	1,118	1,934
Aylmer	987	1,985	Galt	12,394	15,126	Port Dalhousie	905	1,599
Ayr	219	760	Georgetown	1,944	2,452	Port Dover	514	1,790
Baden	664	P.V.	Glencoe	222	763	Port Rowan	127	700
Beachville	757	P.V.	Goderich	1,757	4,674	Port Stanley	373	824
Beamsville	508	1,227	Granton	58	P.V.	Preston	4,514	6,656
Belle River	203	836	Grimsby	919	1,988	Princeton	134	P.V.
Blenheim	714	1,873	Guelph	13,131	23,074	Queenston	125	P.V.
Blyth	133	662	Hagersville	1,050	1,524	Richmond Hill	588	1,295
Bolton	241	629	Hamilton	167,683	164,719	Ridgetown	668	1,986
Bothwell	139	683	Harriston	419	1,292	Riverside	1,417	5,235
Brampton	2,968	6,157	Harrow	562	1,092	Rockwood	145	P.V.
Brantford	23,417	31,622	Hensall	224	686	Rodney	160	758
Brantford Twp.	1,535	V.A.	Hespeler	2,995	2,938	St. Catharines	31,514	34,541
Bridgeport	161	P.V.	Highgate	100	322	St. Clair Beach	95	138
Brigden	91	P.V.	Humberstone	648	2,831	St. George	218	P.V.
Brussels	166	784	Ingersoll	3,574	5,757	St. Jacobs	369	P.V.
Burford	240	P.V.	Jarvis	196	513	St. Marys	1,730	4,009
Burgessville	50	P.V.	Kingsville	729	2,453	St. Thomas	8,761	17,045
Burlington	1,836	3,925	Kitchener	29,983	35,465	Sarnia	6,862	18,599
Burlington Beach	500	1,474	Lambeth	169	P.V.	Scarborough Twp.	5,552	V.A.
Caledonia	432	1,430	LaSalle	292	907	Seaforth	1,038	1,782
Campbellville	45	P.V.	Leamington	2,044	6,048	Simcoe	3,106	6,304
Cayuga	168	700	Listowel	1,526	2,984	Smithville	206	P.V.
Chatham	7,531	17,184	London	44,916	81,567	Springfield	79	382
Chippawa	390	1,228	London Twp.	668	V.A.	Stamford Twp.	3,298	8,275
Clifford	115	491	Long Branch	1,592	4,258	Stoney Creek	266	933
Clinton	684	1,879	Lucan	194	643	Stouffville	334	1,198
Comber	134	P.V.	Lynden	115	P.V.	Stratford	7,650	17,163
Cottam	92	P.V.	Markham	397	1,175	Strathroy	1,545	2,834
Courtright	57	355	Merlin	135	P.V.	Streetsville	268	701
Dashwood	119	P.V.	Merritton	12,021	2,916	Sutton	227	949
Delaware	75	P.V.	Milton	1,613	1,915	Swansea	3,433	7,100
Delhi	728	2,430	Milverton	482	994	Tavistock	655	1,080
Dorchester	145	P.V.	Mimico	3,101	8,785	Tecumseh	438	2,391
Drayton	160	528	Mitchell	762	1,670	Thamesford	234	P.V.
Dresden	510	1,525	Moorefield	56	P.V.	Thamesville	251	816
Drumbo	97	P.V.	Mount Brydges	103	P.V.	Thedford	129	598
Dublin	43	P.V.	Newbury	36	288	Thorndale	70	P.V.
Dundas	3,357	5,245	New Hamburg	635	1,441	Thorold	3,429	5,284
Dunnville	1,463	3,916	Newmarket	1,807	3,800	Tilbury	1,626	1,923
Dutton	279	830	New Toronto	11,864	9,469	Tillsonburg	1,589	4,602
East York Twp.	10,585	41,578	Niagara Falls	10,730	20,371	Toronto	393,919	657,612
Elmira	1,318	2,069	Niagara-on-the-Lake	914	1,764	Toronto Twp.	3,508	V.A.
Elora	467	1,185	North York Twp.	12,291	V.A.	Wallaceburg	4,598	4,802
Embro	108	420	Norwich	459	1,301	Wardsville	41	221
Erieau	132	218	Oil Springs	196	541	Waterdown	258	867
			Otterville	114	P.V.	Waterford	506	1,294
						Waterloo	6,698	8,968
						Watford	355	1,023

MUNICIPAL LOADS, DECEMBER, 1944

	H.P.	Popula- tion
Welland	13,198	14,899
Wellesley	126	P.V.
West Lorne	217	768
Weston	5,519	6,333
Wheatley	226	761
Windsor	56,445	118,040
Woodbridge	671	1,100
Woodstock	9,829	12,339
Wyoming	92	538
York Twp.	22,627	77,175
Zurich	113	P.V.

(66 2/3-Cycle)

Bronte	185	P.V.
Oakville	1,680	3,369
Trafalgar Twp.	656	V.A.

GEORGIAN BAY DIVISION

(60-Cycle)

Alliston	474	1,700
Arthur	180	1,089

Bala	135	355
Barrie	4,320	9,599
Beaverton	234	941
Beeton	99	617
Bradford	220	1,041
Brechin	45	P.V.

Cannington	189	761
Chatsworth	95	333
Chesley	582	1,812
Coldwater	209	545
Collingwood	2,961	6,249
Cookstown	90	P.V.
Creemore	143	661

Dundalk	236	686
Durham	409	1,874

Elmvale	168	P.V.
Elmwood	67	P.V.

Flesherton	85	452
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Grand Valley	154	645
Gravenhurst	1,302	2,261

Hanover	1,383	3,190
Holstein	29	P.V.
Huntsville	1,294	2,943

Kincardine	760	2,483
Kirkfield	27	P.V.

Lucknow	415	856
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MacTier	128	V.A.
Markdale	200	776
Meaford	776	2,759
Midland	4,288	6,754
Mildmay	154	764
Mount Forest	543	1,936

	H.P.	Popula- tion
Neustadt	48	431
Orangeville	764	2,558
Owen Sound	6,579	13,559
Paisley	131	530
Penetanguishene	1,126	4,177
Port Carling	130	520
Port Elgin	429	1,415
Port McNicoll	103	950
Port Perry	311	1,175
Priceville	10	P.V.
Ripley	109	420
Rosseau	25	305

Shelburne	270	1,053
Southampton	581	1,467
Stayner	273	1,106
Sunderland	93	P.V.

Tara	111	510
Teeswater	175	973
Thornton	33	P.V.
Tottenham	119	532

Uxbridge	333	1,480
Victoria Harbour	69	979
Walkerton	1,071	2,534
Waubaushe	85	P.V.
Warton	376	1,750
Windermere	30	117
Wingham	768	2,149
Woodville	83	439

EASTERN ONTARIO DIVISION

(60-Cycle)

Alexandria	277	1,976
Apple Hill	44	P.V.
Arnprior	1,322	4,019
Athens	105	626

Bath	50	325
Belleville	8,073	15,498
Bloomfield	117	636
Bowmanville	3,186	3,850
Brighton	526	1,462
Brockville	4,963	11,112

Cardinal	301	1,602
Carleton Place	1,843	4,143
Chesterville	318	1,094
Cobden	124	643
Cobourg	2,276	5,907
Colborne	272	960

Deseronto	241	1,002
Finch	95	396
Frankford	164	1,095

Hastings	157	823
Havelock	200	1,103
Iroquois	267	1,123

	H.P.	Popula- tion
Kemptville	377	1,230
Kingston	15,937	29,545
Lakefield	454	1,301
Lanark	101	686
Lancaster	66	570
Lindsay	3,983	8,345
Madoc	236	1,130
Marmora	158	1,004
Martintown	46	P.V.
Maxville	114	811
Millbrook	105	749
Morrisburg	335	1,484

Napanee	1,422	3,241
Newcastle	168	701
Norwood	186	710

Omeme	222	630
Orono	98	P.V.
Oshawa	18,302	26,610
Ottawa	39,929	150,816

Perth	1,780	4,187
Peterborough	14,573	24,977
Pictou	1,318	3,400
Port Hope	2,910	4,997
Prescott	1,533	3,318

Renfrew	238	5,673
Richmond	75	428
Russell	82	P.V.
Smiths Falls	2,919	7,741
Stirling	365	947

Trenton	5,130	8,183
Tweed	290	1,181

Warkworth	84	P.V.
Wellington	241	948
Westport	121	725
Whitby	1,551	4,236
Williamsburg	98	P.V.
Winchester	328	1,017

THUNDER BAY SYSTEM

(60-Cycle)

Fort William	19,051	30,370
Nipigon Twp.	273	V.A.
Port Arthur	24,785	24,217

NORTHERN ONTARIO PROPERTIES

Nipissing District

(60-Cycle)

North Bay	5,010	16,013
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Patricia District

(60-Cycle)

Sioux Lookout	345	1,967
---------------	-----	-------

Sudbury District

(60-Cycle)

Capreol	282	1,660
Sudbury	11,327	36,724



HYDRO *Lights* The Way

- In the operating room, under a shadowless flood of light, surgeons perform miracles with the help of Hydro. Sensitive electric cutting instruments are used in many delicate operations. Elsewhere, it powers the X-ray and therapy machines. It protects nurseries from air-borne germ infection. It conditions the air, runs the elevators, pumps the water. And these are but a few of the many ways in which electricity serves.

Hospitals provide an outstanding example of the benefits derived from 24-hour Hydro service. Indeed, without the ever-present aid of electricity, there could be no modern hospital. With its help . . . surgery and medicine discover new ways and means to fight and control disease and illness . . . industry creates new and better products for the progress and welfare of mankind.

Just as the doctor relies on electricity to aid him in healing the sick, so we, in our everyday life depend on it to assist in performing many of our daily tasks. No matter where we live . . . be it city or farm . . . we can look forward to even better living in the days to come, by planning now to enjoy more of the benefits that electricity can bring.



HYDRO

News

"DONA NATURAE..."

OL. 32

APRIL, 1945

NUMBER 4

HE *Risks* HIS LIFE



● A soldier risks his life, hour after hour and day after day, to do his duty. And a worthy soldier never quits because his objective is "almost" reached.

One Victory Bond . . . that extra bond you might buy if you would deny yourself; that small bond that may seem like a drop in the bucket to you . . . is so vital that it justifies any self-denial that you can make. Never have our fighting forces needed your financial support more than now.

Buy that
EXTRA

VICTORY BOND
Now!

THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO



THE HYDRO - ELECTRIC POWER COMMISSION OF ONTARIO

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The Front Cover



SPRING-LIKE and restful, the exquisite delicacy of Nature—in quiet harmony with a symbol of Man's artistry—gives eloquent expression to the inscription on the Commission's coat-of-arms "Dona Naturae Pro Populo Sunt" (The Gifts of Nature are for the People). The striking limestone edifice in the background is the H.E.P.C. head office building in Toronto, viewed from the grounds of the Toronto Conservatory of Music. The photograph is the work of J. H. Mackay of the Commission's staff.

Volume 32

April, 1945

Number 4

CONTENTS

	Page
A Gallant Neighbour Passes - - - -	2
Page Three - - - - -	3
Harnessing Horsepower - - - - -	4
Five-Year Rural Plan - - - - -	8
Knowledge Is Power - - - - -	9
Come Into The Garden - - - - -	12
Tomorrow's Blue Heavens - - - - -	14
On With The Dance - - - - -	19
Quarter Century Club - - - - -	20
Around The Hydro Circuit - - - - -	23
Hydro Home Forum - - - - -	24
Lighter Lines - - - - -	26
Downwards Puzzle - - - - -	27
Monthly Load Summary - - - - -	27
Municipal Loads - - - - -	28



A Great and Gallant Neighbour Passes



*I*N the sudden and tragic passing of President Franklin Delano Roosevelt, the United States has lost one of her greatest sons and leaders, Canada has lost a kindly, friendly and understanding neighbour and the world has lost a gallant and untiring champion of right as opposed to might.

Canada, in common with all other members of the United Nations, stands by the side of the United States at this time in paying sincere, heartfelt tribute to a truly great man.

All who, with the President, have laboured through the grim days of war to uphold freedom, justice and tolerance, will be deeply conscious of the loss at a time when victory is at hand and when the leaders of free peoples face the tremendous task of building a new world in which there will be enduring peace.

The President of the United States is dead but his personality, his fireside chats to "My Friends," his courage and the great principles for which he stood will not die.

In the memorable words of Carlyle: "No great man lives in vain. The History of the world is but the Biography of great men."

A HAPPIER SPRING

SPRING, in this country, is more a state of mind than a date on a calendar. In Britain the ancient bards wrote about not casting a clout till the May be out. Over here, however, the seasons don't run according to schedule, and a bit of winter is quite likely to creep into March or a brisk snow-storm into May. But even if the timing is poor, there inevitably comes a morning when John Citizen awakens to find his last winter snuffle gone and a feeling of real well-being in his bones. As he stretches and looks out of the window he notices appreciatively that the grass on his lawn has begun to look green again. And as he walks to work he finds himself loitering, with his face turned to the sun, and he stops just long enough to remember that only a few weeks before he has been walking on the same street bent double to the wind and snow. And then the sweetness of the early sun seems doubled. And he knows it is spring.

The Swedish dramatist Strinberg has one of his characters say as he comes home from work one April day and starts to take off his coat: "How heavy this coat is—it feels as if it had soaked up all the cares and disappointments of the whole winter and that I am carrying them about on my shoulders."

This feeling is familiar to most people at this time of year, and during the past five and a half years of war many shoulders have been heavily burdened with weariness and anxiety. But if the war has brought special burdens, this spring is bringing a very special reason for gratitude. After these long years of war, the European conflict is drawing to a close. Along with the signs of spring and new life on the earth comes the promise of peace and the hope that men may once more dare to plan their lives and live them in friendliness and creation rather than hate and destruction.

FIVE-YEAR PLAN

WHEN Hydro has the necessary labour and materials to proceed with the five-year rural electrification plan, the gradual transition which will be wrought in the pattern of Ontario's rural life, will make a far-

reaching impact upon industry and business.

The outstanding merit of the plan is that it is designed to render a service of definite and permanent value. It is not a stop-gap to provide artificially-stimulated activity to take up the slack in peace-time readjustment. It will be one of the chief factors in placing agriculture on a footing where it can function to advantage and contribute its full share to the future prosperity of the province.

In all progressive countries electricity is playing an increasingly important role in enabling the farmer to adjust his methods of production and his home environment to modern conditions. In Canada a flourishing agriculture is the kernel of national prosperity, and the necessity of providing electrical services to farm communities is, therefore, accentuated.

Ontario is the pioneer in rural electrification in the Dominion. In the years before the war, in spite of many difficulties, the Commission succeeded in bringing Hydro power to over 50 per cent of the farms in the province. Then restrictions were imposed which checked further progress.

The five-year plan will take up the job where it was left off. When it is completed, 85 per cent of rural residents and 84 per cent of the farms in the province will be supplied with electric services.

To make these services fully effective the farmer will have to install the necessary appliances and farm equipment for economical production. Grouping together the outlay of the Commission and the consumer, it is estimated that the five-year plan will entail an average expenditure of \$1,000,000 a month over the five-year plan.

Complete co-operation among Hydro, industry, business and the farmer can assure a realization of the many far-reaching benefits which the plan is designed to provide.

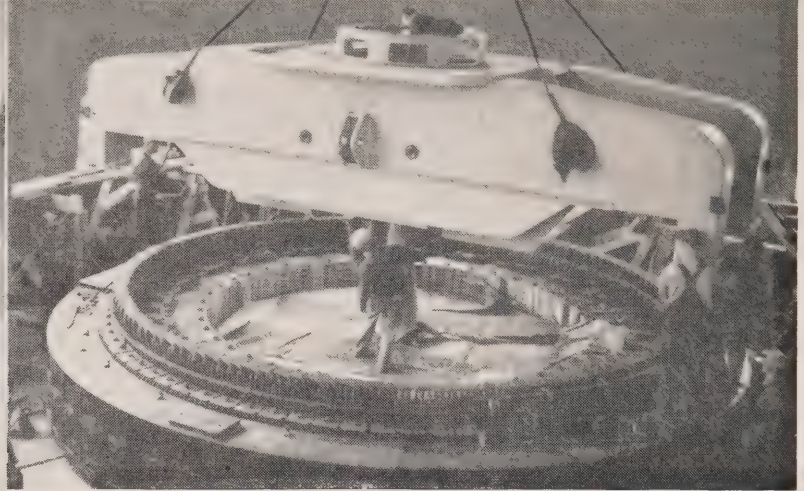
"INVEST IN THE BEST"

THE slogan for the forthcoming victory loan, "Invest In The Best," is well chosen in that it directs attention to the men and women who have brought high honour to Canada in this war and, at the same time, it refers to one of the finest investments all Canadians can make for the post-war years.

HARNESSING HORSEPOWER



WATER PACKS a mighty wallop as it roars through the sluiceway gates of a dam to boil up in a heaving mass of soap-like foam. This illustration shows the dam at Abitibi Canyon development.



IT WOULD take over a million men working twenty-four hours a day to do the job that is done by a single generator in a Hydro plant. The above photograph shows the installation of a unit at Barrett Chute.

T HIS is the seventh in a series of articles which outline step-by-step, the work involved in the building of a power plant from the time a site is selected until the electricity is available in homes and factories that may be located hundreds of miles away.—The Editor.

ELECTRICAL DESIGN OF A DEVELOPMENT

By F. H. Chandler, Station Engineer,
Electrical Engineering Dept., H.E.P.C.

PREVIOUS articles in this series have described the planning involved in selecting hydro-electric power sites and the various hydraulic studies and designs which are essential factors in the harnessing of water for its transition into mechanical power.

This mechanical power must now go through a second transition, the conversion to electrical energy. Such a conversion makes it possible to transmit large amounts of power from remote sources to areas where it can be used to advantage, benefiting both heavy industry and the domestic and farm users alike.



F. H. Chandler

This article, therefore, carries the development one step further, and will place electrical energy at the right transmission voltage on suitable steel towers ready to be connected to the vast network of transmission lines spreading throughout the province.

The principal electrical and mechanical equipment essential in such a project can be grouped under the following heads:

Electrical generators, which convert mechanical power into electrical energy, are coupled directly to the turbines.

Transformers are required to alter the voltage obtained at the generator terminals to a higher voltage suitable for long distance transmission requirements.

Oil circuit breakers used for isolation of power circuits are big brothers to the snap switches used in homes.

Relays, used for clearing faulty circuits, open the oil breakers just as a fuse provides protection in domestic wiring and appliances.

Switchboards located at a suitable control centre on which are assembled the guiding instruments and control devices for the information and use of the plant operator.

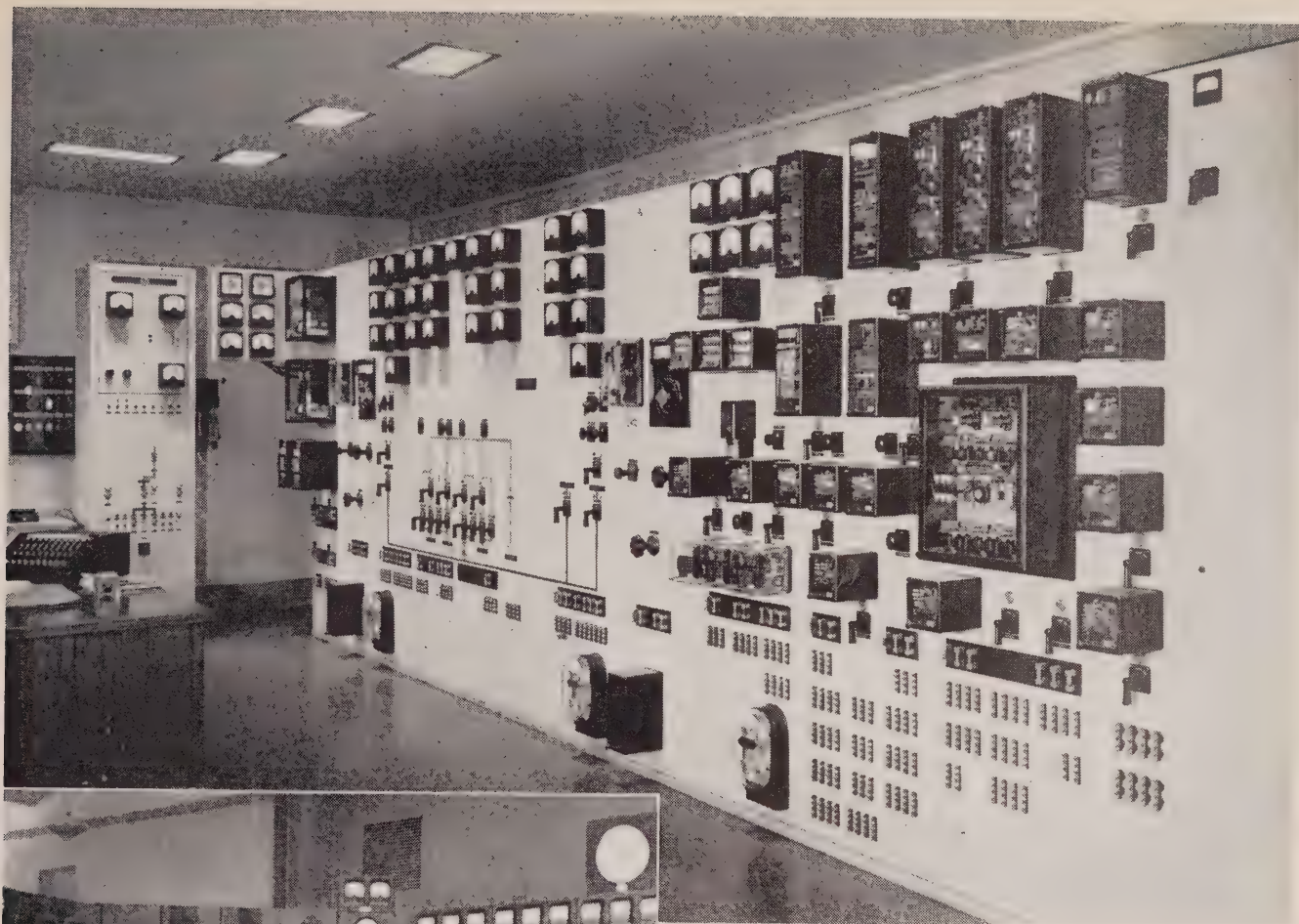
Lightning protective equipment, which could be compared with safety valves on a steam boiler, protect expensive electrical equipment against lightning surges and other abnormal increases in voltage of short duration.

Many miles of conducting cables are required for the control and operation of the various pieces of equipment, and insulators provide adequate insulation from the ground of the various conducting circuits.

Power-operated cranes are used for handling the varied parts of the generators, turbines, and other equipment for assembly and dismantling.

Auxiliary apparatus, such as water pumps, air compressors, oil pumps, oil conditioning equipment and storage tanks, ventilating fans, air conditioning equipment, and other miscellaneous smaller items are also employed.

It is assumed that the hydraulic design features of a power development have been completed up to the main



A SWITCHBOARD in a generating plant, with its impressive array of switches, dials and controls, is both mystifying and fascinating to the layman. The switchboard, above, is located at the Ragged Rapids development.



IN THE control room at Hydro's Abitibi Canyon plant are both the electrical and telephone switchboards. The two operators (left) were hard at work when this photograph was taken during a visit to the Canyon.

floor of the powerhouse, this level being the line of demarcation where the substructure finishes and the superstructure starts. This is the dividing level at which the electrical engineering department takes over.

The electrical engineer, however, must be familiar with what has been done in the lower levels. Certain electrical equipment must be housed below the main floor; conduit and cable systems will be required in the substructure concrete and generator ventilating schemes, as well as the oil, compressed air and water services, may require openings in the foundation structures. The

electrical engineer must, therefore, co-operate with the engineers of the hydraulic department as their designs progress and arrange to have necessary features incorporated in the substructure.

In these initial states of combined work, which can be considered a critical period in the design procedure, the hydraulic and electrical engineering departments work together closely in order that all the equipment can be installed in a way which will assure the efficient operation of the plant.

Drawings of the powerhouse substructure showing the spacing of the generating units, the floor area, and a cross-sectional view through the plant are received from the hydraulic department along with the final horsepower rating and characteristics of the turbines. This data contains the normal and runaway speeds of the turbine, the weight of the rotating part of the turbine, including the added weight resulting from the water thrust and the fly-wheel energy to be obtained in the generator rotating parts for proper governor control of the unit.

With this information, the electrical engineer is able to establish the rating and characteristics required in the

generator and other major pieces of equipment. He can now prepare specifications on which tenders can be solicited from the equipment manufacturers. To permit progress in design studies, preliminary information is also requested and obtained from the different manufacturers on expected generator dimensions and weights.

The design engineers are now required to arrange space for the parts of the generator and turbine within the confines of the substructure area.

At this stage, the electrical planning section provides a schematic one-line electrical diagram of the development. This diagram is based on system studies and shows how additional capacity can best be supplied to the system. These studies also show the characteristics of the protective relays required on the lines feeding into the network and the fault currents expected when trouble is experienced on the transmission circuits.

With this information, the main electrical diagrams are started, characteristics of oil circuit breakers are established, and specifications for the metering, control, and relaying are started.

Extensive Study Involved

The scheme of connections to be used requires extensive study in the early stages of design. It must be borne in mind by the designer that a suitable arrangement of busses and grouping of equipment should be provided whereby the generators and transformers can be operated at the highest efficiency under all conditions of station load. It is also important that a reliable source of supply be provided for all station auxiliaries and that a plan of relay protection be provided for equipment, busses and lines to allow automatic isolation of defective equipment. At the same time, short circuit currents should be limited by separation of groups of generators or by use of limiting reactors. A means must be provided also to facilitate the inspection or repair of a generating unit or breaker without interfering with normal station output.

The arrangement of busses is often decided by the area and shape of the space available at the site.

As the time required to build generators is much longer than for other electrical apparatus, their purchase must have first priority. Through the co-operation of the purchasing department, tenders for generators are received and a comparison of these tenders is made to price, delivery, weights, dimensions, efficiency and design before the order is placed.

When accurate dimensions and weights are received, final design drawings can proceed. The weight of the heaviest part to be handled, which is usually the rotating part of the generator, establishes the capacity of the crane or cranes if more than one is required. The height of the unit above the main floor level, and the lift to remove the rotating parts on both units from the machine and move them past other units will establish the crane rail height. The height of the crane girders and trolley will establish the roof trusses and the roof elevation of the superstructure.

At this time, the design engineers are preparing structural drawings while architects are preparing perspective drawings of the finished building. The railway siding and entrance to the powerhouse is decided, and plans and elevations are being prepared which will allocate space for the control room, offices, oil conditioning rooms, machine

shop, storage rooms and areas for locating the low voltage switching equipment, water pumps and air compressor units.

The modern trend in power development design is to locate power transformers outdoors, either in the switchyard area or on the upstream side or tailrace deck of the powerhouse. Their location should be such that they can be readily transferred by specially designed trucks to a location under the powerhouse main crane.

If there is considerable space between the upstream wall of the powerhouse and the hydraulic headworks, as at Cameron Falls plant on the Nipigon river, the power transformers can be economically located adjacent to the upstream powerhouse wall. If this space is too cramped, as at Alexander Landing development on the same river, their location in the switchyard is undertaken. Plants may be designed to have transformers located on the downstream side. If the outgoing electrical circuits, due to topography, are taken away in a downstream direction, it is possible that such a location might be economically sound.

Contour Drawings Prepared

The switchyard area is chosen from contour drawings surveyed and prepared by the hydraulic department. A suitable level area is chosen, and the designs proceed with the least disturbance to virgin conditions.

The rating for the power transformers is established to match the rating of the generators, and with known voltage characteristics, specifications are prepared and the transformer order is placed.

Specifications for other equipment of a more minor nature follow, and as the orders are placed and outline drawings are received, the designers are piecing the parts together on paper into one complete working arrangement.

Due to the large capacities of modern generators, the disposal of the electrical losses, which appear as heat, presents a problem. With ventilating air requirements of 100 cu. ft. per minute for each kilowatt of loss, representing in large machines quantities of air in the order of 70,000 cu. ft. per minute, it is impractical to discharge this air into the building. In some designs, ducts allow entrance of this air through the downstream wall of the powerhouse and discharge the air through other ducts either through the wall or through the roof. Sufficient warm air from the discharge side is discharged through dampers inside the powerhouse to heat the building in winter. At the Queenston plant one of the ten machines is totally enclosed, and the ventilating air is confined and recirculated through water-cooled radiators where the heat is given up and cool air returns to the machine to repeat its cycle. This results in a much cleaner machine, and internal temperatures within the generator can be controlled to better advantage. This practice also assures longer insulation life, insulation being the critical part of the unit.

With high speed relay protection for internal faults in the generator, it is not expected that fires will occur on coil failure within the unit. However, as an added precautionary measure against fire, particularly where the ventilating air system is confined, carbon dioxide gas is sometimes piped into the housing, and actuated by the fault protection relays.

The output of the generator is essentially supported by the excitation system which must be reliable. To assure

no failure of insulation in connecting cables, a rating of 2300 volts for cables is generally specified.

If the power transformers are to be located adjacent to the powerhouse wall, watercooled units are specified. These units are oil-filled with cooling coils of copper located in the upper area of the tanks. The losses which appear as heat must be carried away, and water is used as the medium. A suitable water supply must be piped to these units. If they are to be located in the switchyard some distance from the powerhouse, forced air-cooled units will likely be specified.

Oil circuit breakers are now being manufactured in the higher voltage classes either in single-tank or three-tank construction, which are capable of interrupting up to 2,500,000 kv-a. As new systems expand and more generation is added, such values are being approached. It is, therefore, the aim of the manufacturer to improve the interrupting ability of breakers. Developments during the last few years along these lines have been rapid.

The building frame of a generating plant is usually steel, the columns being spaced to suit the spacing of the generating units. Small plants may be of brick construction.

Windowless Buildings

There has been a recent trend toward windowless buildings. The 25-cycle DeCew Falls development, built in 1943 by the Commission, was so constructed. This building is of cut stone construction with steel skeleton frame work. It is yet too soon to decide whether such a trend will be continued even though exterior painting and window cleaning hazards are removed and some benefit is derived from artificial means of lighting.

Generator switching is now of the totally enclosed type, all electrical hazards being adequately safe-guarded by metal enclosures. One might walk through the completed powerhouse and find no visual evidence of live conductors or apparatus within the building proper.

The hazards to the electrical equipment from over-voltage caused by system faults, switching surges or lightning surges are still the worry of the designer. He is faced with the problem of co-ordinating the insulation of the equipment cables and overhead busses so that these voltage surges will be conducted to ground either by gaps or lightning arresters before flashing over or puncturing the insulation of any part of the equipment. For direct lightning strokes, which are estimated to strike an exposed station once in every four or five years, he can provide overhead wires located above the conductors and solidly connected to ground. It is considered that by such coverage, the possibility of a direct stroke of lightning is practically eliminated.

Even with all precautions taken, insulation will still fail at times when lightning storms occur.

In the final phase, it is essential that some manual control must be exercised to make a development operate as a power supply. Hydro-electric developments are reaching further back into the wilds of the province, far from existing communities with their schools, churches and entertainment. A colony must be established for the operating men and their families, and a suitable location is chosen within easy reach of the development. An endeavour is made to provide these families with comfortable homes, pleasant surroundings and a community centre for entertainment and social functions.

In some locations, designs provide for semi-automatic,

Says Canada Has Head Start In Meeting Future Problems

**Graham Towers, Governor Of Bank Of Canada,
Urges All-Out Support Of Forth-
coming Victory Loan**

"TRULY, the future will belong to those who plan for it."

These words were voiced by Graham Towers, Governor of the Bank of Canada, when addressing a gathering of personnel publication editors, victory loan chairmen and top business executives in the Royal York Hotel, Toronto, on March 20.

The occasion was the Fifth Forum For Victory sponsored by the Canadian Association of Personnel Publication Editors, better known as CAPPE, in co-operation with the National War Finance Committee. These forums, which have officially launched the last four victory loans, were sponsored with the idea of making all information available to those who are entrusted with the job of meeting loan objectives in war plants and other organizations. They represent an important contribution to Canada's war effort by CAPPE in which Hydro News has played an active role.



Graham Towers

Mr. Towers who was the guest speaker at the fifth forum thanked the editors for their valuable support.

He strongly emphasized the vital need for all-out support being given to the forthcoming loan. Canadians in all parts of the country, he stated, could make a powerful contribution to the building of a better, happier world, by continuing their support of measures to maintain stability. "These are the facts all should know," the speaker said. "Individual and national action based on understanding are sure to bring us better results than action based on ignorance or misunderstanding."

Head table guests included Osborne Mitchell, secretary, and M. J. McHenry, director of promotion, The Hydro-Electric Power Commission of Ontario. William Rattray, editor of Hydro News and president of CAPPE, presided.

or fully automatic remote control of the units in the plant, thereby reducing the requirements for staff. Many factors are considered before decisions are made to adopt automatic operation in any particular case.

The operating department, the tenant of the development, is consulted on such matters, and the extent to which these services are supplied depends upon personnel requirements.

These facts indicate the important role of the electrical engineering department in the construction of a development. At the same time they emphasize the close teamwork among all departments of the Commission in serving the people of Ontario.

FIVE-YEAR RURAL PROGRAMME READY FOR POST-WAR PERIOD

**Hydro's Projected Plan Calls For Construction Of 7,000 Miles Of
Additional Rural Lines To Serve 57,000 New Consumers—To
Spend \$22,000,000 And Reinvoke Rural Loans Act
At Reduced Interest Rate**

AN intensive five-year rural electrification programme to be undertaken by Hydro in the immediate post-war period will make Ontario one of the most highly electrified farming areas in the world, bring still greater benefits to both existing and new rural consumers and open up a big market for electrical appliances and farm equipment.

Details of the programme were outlined recently by Hon. George H. Challies, vice-chairman of The Hydro-Electric Power Commission of Ontario.

The plan calls for the construction of over 7,000 miles of additional rural lines which will bring Hydro service to approximately 57,900 new rural consumers, of whom 32,000 will be farmers. It will involve an estimated expenditure of some \$22,000,000 by Hydro on labour and materials, with the Ontario government providing a grant-in-aid to cover fifty per cent of that cost.

Mr. Challies also announced that the government planned to reinvokc The Rural Power District Loans Act to assist farmers to finance the purchase of necessary equipment and appliances, and that the interest on loans would be reduced from 5 to 4 per cent.

Under the projected plan, it is estimated that existing and new rural consumers would spend over \$40,000,000 on wiring their homes and farms and on equipment. That sum, combined with what the government would spend, would represent a total expenditure of over \$60,000,000 and average \$1,000,000 a month over the five-year period.

From the standpoint of employment, it is estimated, that the services of 5,000 men would be required during each of the five years by the Commission and the electrical industry to complete the plan.

At the present time only 55 per cent of Ontario farms capable of receiving electrical service are now being served, representing 61,486 farms out of a possible 112,000. Upon completion of the vast expansion schedule, it was estimated that 81 per cent of the total ultimate mileage of rural lines will have been constructed and that almost 85 per cent of farms within the area that will eventually be served by the Commission will be enjoying the conveniences and benefits of rural Hydro service.

"The government," Mr. Challies stated, "realizes the all-important place which agriculture occupies as a basic industry in the economic structure of this province. It is, therefore, the desire of both the Commission and the government to inaugurate a programme which will enable as

many farms as possible to enjoy the benefits of low-cost Hydro power."

"The application of electrical power to agricultural requirements is the key to farming as a successful business in the post-war world," the commissioner continued. "Production and conservation of crops and livestock depend more and more on electrical aids; and the effective application of electricity to many household uses has been recognized as an essential to the health and welfare of the farm family. In short, electricity provides the greatest aid to the farmer at the lowest cost by increasing his production, saving him labour, and improving his standard of living."

The fact that the government would provide a grant-

(Continued on page 22)



WHEN HYDRO comes to his door, the farmer has a versatile hired man whose services are available twenty-four hours a day.



GENERAL VIEW of the H.E.P.C. library, and on the right Phyllis Foreman, librarian, is shown answering one of the many telephone requests for information.

KNOWLEDGE *is* POWER

By **PHYLLIS FOREMAN,**
H.E.P.C. Librarian

QUESTIONS—lots of them—ranging from the use of refrigeration in the construction of Grand Coulee dam, to a bibliography on the underground gasification of coal, are commonplace in the H.E.P.C. library, which is a clearing house for sixty-four dollar brain teasers.

This department, having been considerably enlarged and in full swing since May, 1942, is playing a major role in keeping the Commission's engineers and technicians, not only abreast of the times, at home and abroad, but in many cases, "on top" of future developments in many fields.

Having a collection of about 11,000 volumes, the library contains material on all subjects connected with the work of the Commission, and is in an excellent position to supply information on almost every conceivable subject.

To make a search for literature on a given subject is often a long and tedious task. It is generally recognized, however, that this is the first step in any investigation, for through it, unnecessary duplication of expensive experimental work can be avoided.

Classifying, filing and indexing the numerous publications coming daily to the library keeps the staff of two librarians (both graduates of the University of Toronto Library School) and two assistants, continually "on their toes." Books are designated according to the Dewey Decimal Classification, pamphlets are filed by subject, and serial publications are divided into groups and filed alphabetically within the group.

When requests are made for, say, the number of

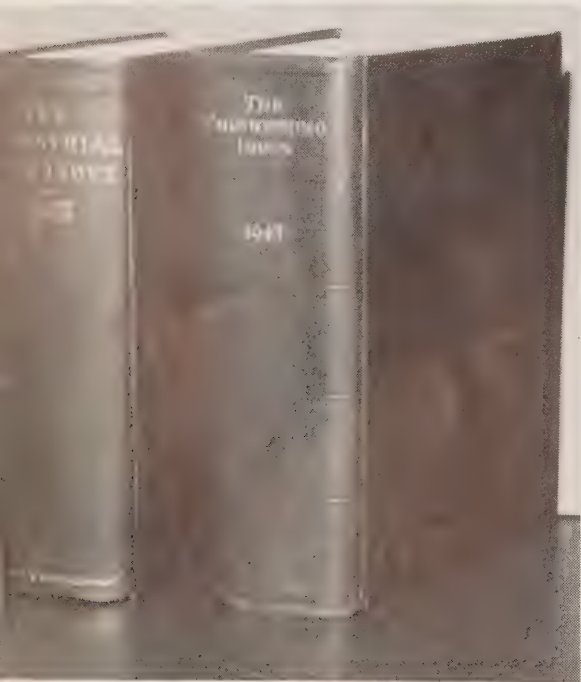
kilowatt-hours used in Canadian sawmills in such and such a year; or, for the history of the Mississippi River Commission; or, for some recent articles on the heat pump, and various other similar questions, the information is very often located through the Engineering Index, the Industrial Arts Index and the Library Catalogue. Although the Engineering Index is particularly helpful and reveals that a multitude of publications are available on a wide variety of subjects, it does not always contain the material needed. It is then necessary for the library staff to make special searches for the required information.

As in most technical libraries, the largest part of the stock consists of serial publications, including magazines, society transactions, government and university reports, while the book collection is small. Special collections include historical material on "Hydro," annual reports of other electrical commissions, and a large assemblance of material on the subject of vibrations.

Between 200 and 300 periodicals, covering engineering and business subjects are received from United States, Great Britain, Australia, as well as from different parts of Canada. Among these may be found such well known publications as Engineering Journal (Montreal); Electrical News and Engineering (Toronto); Electrical World (New York); and Engineering (London). Two publications received regularly from England have a rather unique interest in that they come from engineering societies composed entirely of women. They are called, the Woman Engineer, published by the Women's Engineering Society, and the Electrical Age, published by the Electrical Association for Women. Another periodical of unique interest is the Polish Engineering Review, which is published by the



LIBRARY COMMITTEE, left to right, E. M. Wood, C. K. Duff, Phyllis Foreman, W. P. Dobson, chairman, J. J. Traill, and C. J. Vick meet periodically for the purpose of selecting publications for the H.E.P.C. library.



SOMETIMES CALLED "The Library Bibles," these two indexes (centre) are invaluable in tracking down information on a wide variety of subjects.

CLASSIFYING, FILING and indexing publications keep the staff "on the go." Lower illustration shows a card catalogue.



Association of Polish Engineers in Canada.

Government documents do not present as interesting an appearance as do the magazine (though the recent "Ganaraska Report" must be mentioned as an exception to this rule), but between the covers of these may be found facts of inestimable value.

General and Special Subjects

It has been said that standardization is something to be avoided at all costs, but in the work of an engineer, the exact opposite is the case. And so the library maintains files of specifications or standards, coming from the Canadian Standards Association, the American Society for Testing Materials, the American Standards Association, the British Standards Institution, and others.

The library's book collection contains handbooks, such as Kent's Mechanical Engineers' Handbook, Pender's Electrical Engineers' Handbook, Merriman's American Civil Engineers' Handbook, and others; basic reference works in each subject and, as well, a selection of the new books published on all subjects of interest to the Commission. In addition there are also general reference books such as encyclopaedias, dictionaries and year books (the Canada Year Book is one of the most useful), books giving information about firms (for example the Canadian Trade Index and the publication of Moody's Investors Service) and books giving information about people (Who's Who in Canada, the Financial Post Directory of Directors) and others.

In order that members of the staff may be kept in touch



ROBIN ADAIR, assistant librarian, checks a magazine. Included in the above group are periodicals from United States, Great Britain and Australia, as well as from different parts of Canada.

MICROFILM AND photostats are being used increasingly in the modern library for the reproduction of certain records. **Jean Corbett** (centre) of the Hydro library staff, is shown using a microfilm viewer.

THERESE DILLON studies an old newspaper story about Sir Adam Beck, which is reproduced on the microfilm and "blown up" on the reader.

with all new developments in their fields of work, magazines are circulated on "routing lists." About 200 publications are circulated regularly in this way to 258 members of the staff. Considerable increase in the use of this service has been evidenced during the past three years, as twice as many publications are circulated now as in 1942, and the readers have increased by 50 per cent.

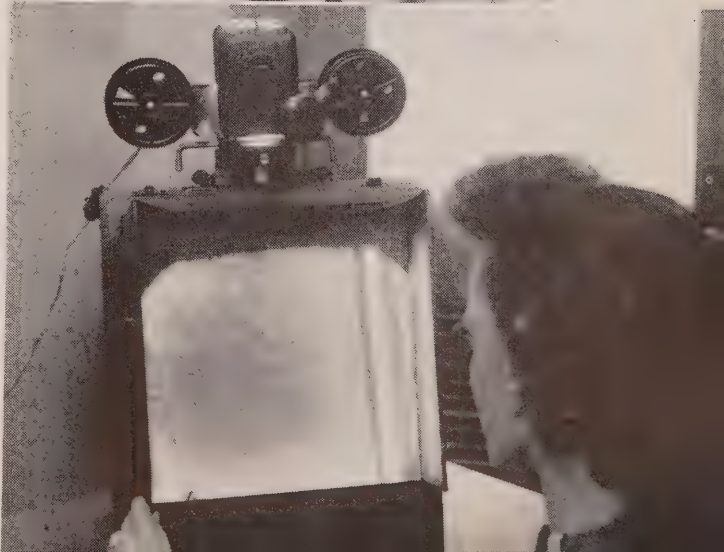
In addition to this service, all publications may be borrowed from the library, and the use of material in this way has also increased, the circulation in 1944 being about three times that of 1942.

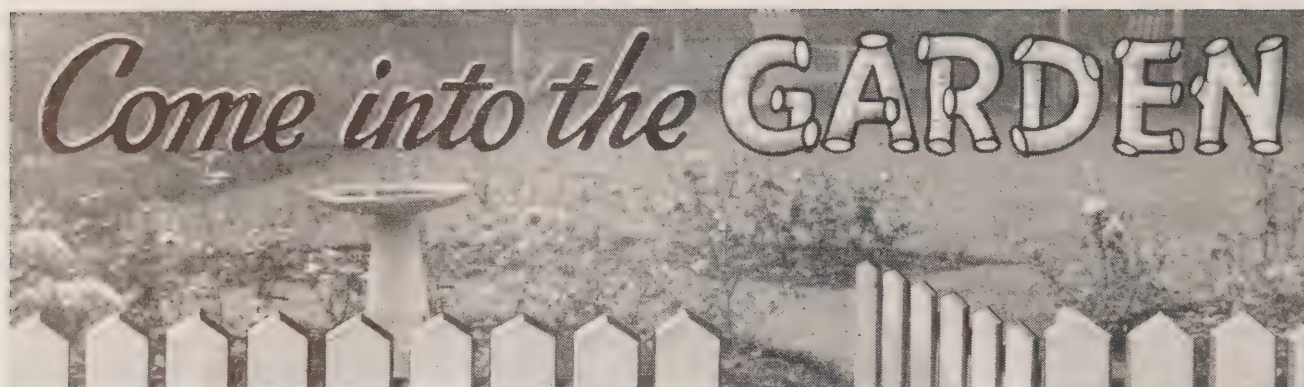
When the library is unable to supply a certain publication or information which is required, other sources are consulted. Invaluable service in this connection is received from the University, Public and special libraries in Toronto. Sometimes it is necessary to go outside the city for certain data. In such cases application may be made to the Library of the National Research Council at Ottawa; the Library of the Engineering Institute in Montreal, the Engineering Societies Library in New York, and others. If it is not convenient to borrow a certain publication, the required article is reproduced either by photostat or microfilm.

Functions of Library Committee

It has been estimated that there are about 3,000 periodicals of some professional interest to engineers and about 1,500 books on scientific, technical and business subjects published annually. Selecting from these, the publications which will be of value to the H.E.P.C. library

(Continued on page 25)





Come into the GARDEN

PLANNING THE HOME GROUNDS

By Leon Van Cleemput, Chief Horticulturist,
Dept. of Botany, University of Toronto

IN a comparatively short period Canada has become a nation of garden-makers. The home no longer stops at the front door of the house; it has been expanded to include the grounds. The lawn with its framing of trees and shrubs, the flower garden, and in the last years, the vegetable garden, which has become a national and economic necessity, are integral parts of the home, in which the owners rightly take much joy and pride.

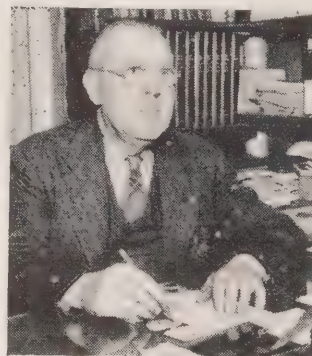
In planning the home grounds the first considerations are privacy, variety, shelter and balance. The arrangement of a garden should be carefully considered to make it suitable to one's individual taste. It is the place where interesting garden pictures may be created with flowers, shrubs and trees, enhanced by such special features as a bird bath, a pool, an arbour, garden seats and other sundries, so that the garden will be more like an outdoor living room.

If possible, no mistake should be made about the main, permanent features. Minor ones may be changed a great deal in coming years, as this is a part of the recreation of gardening. In planning the garden, the rear of the house is preferred because the area between the house and the road or street can be better used as a lawn and treated in such a way as to properly set off the house.

Although certain planners encourage the open community type for home grounds, I consider that this idea will almost entirely preclude the practice of finer gardening. I like to see gardens nicely hedged or railed off, so that stray dogs and unceremonious persons may be kept at a proper distance, and most of all for the sake of the enjoyment and encouragement of that quiet privacy, typical of our old country homes, without which the true pleasure of gardening cannot be obtained.

As for the layout of the garden, every amateur should get all the information possible before starting this fundamental work. Bulletins and pamphlets on every phase of gardening are obtainable at the Department of Agriculture, absolutely free of charge, also at our experimental stations. This literature is really the "ne plus ultra" for every gardener. It gives the best up-to-date information, based on local experiments. Foreign literature is often confusing, even useless.

THIS is the first in the series of four articles which are being written specially for *Hydro News* by Leon Van Cleemput, Chief Horticulturist, Department of Botany, University of Toronto. Mr. Van Cleemput, who is internationally known, was born and educated in Belgium. He graduated in science from the Louvain University and from Ghent in horticulture. He has studied gardening in Italy and Britain, rock gardening in Switzerland and landscape gardening in France. When serving with the government of Belgium he spent some years



in the Belgian Congo. Coming to Canada in 1930, Mr. Van Cleemput joined the staff of the University of Toronto the following year.

Remember, also, to consult your Victory garden folder, compiled by the Hydro Horticulture Club. I consider this folder a great source of information—so practical that I refer to it very often myself.

Now that the new season is under way, the club's board of directors are once more working hard to give you every possible support for the coming gardening year, and helpful information will be given through regular articles and lectures.

Though spring seems to be with us at a very early date, outdoor work, especially uncovering, should be postponed at least until the middle of April. Experience has shown that heavy frosts may still be expected and the damage to an uncovered garden could be disastrous. So make sure that the covering of your roses and most of the perennials is still in perfect order. The latter part of April is a more appropriate season for speeding up outdoor gardening work. One operation seems to bother many gardeners at present, the pruning of the roses which are spreading all over the place. If the hybrid teas and perpetuals are budding too high, pruning would not have any bad after effects, as long as the mulch is not removed.

Most of us have already started, or are ready to sow the seeds of the plants that will adorn our garden or provide the necessary vegetables for our families. It seems appro-

prate to mention several new varieties, as a further postponement would prevent you from enjoying their beauty or their flavour this year.

In the flower garden, the following recent novelties have proven very satisfactory for most of Ontario: petunias, CHEERFUL and IGLOO; the first, a beautiful light rose with a tinge of salmon, semi-dwarf, is excellent for house decoration; the latter, a real, compact dwarf, white, is excellent for the border. Petunias should be started early at a warm temperature, but once transplanted it is best to keep them cool to promote the growing of sideshoots before the plants have grown too spindly.

Gaillardia PINWHEEL, a single, wine-coloured flower with a silvery white edge is quite unique.

The annual rudbeckia, MY JOY, is undoubtedly one of the finest novelties ever produced. Plants are two feet high, with beautiful, five-inch yellow flowers and black centres, on stiff stems, and are excellent for cutting. MRS. GILBERT'S AMPLE GOLD celosias, cockscomb type, another novelty that should be in every up-to-date garden, has beautiful regular combs, light to dark pink, tipped with gold, on two feet high plants. Remember that celosias detest commercial fertilizer or too much manure. A fairly poor soil, but a large amount of water, will grow the best celosias. In the dwarf celosias of the plumosa type, the RED FIERY FEATHER is outstanding.

Portulaca JEWEL is another must. A brilliant Tyrian rose, single, is four times as large as the common type, with flowers carried well above the foliage. In full sunshine and in poor soil, this novelty will make quite a showing.

In the morning glories, COLUMBIA, a combination of white, red and blue and the beautiful white PEARLY GATES can be recommended. If you want lots of flowers on your morning glories, see to it that liberal fertilizer is avoided.

A plant that has taken a definite place in the annuals is CLEOME PINK QUEEN (Spider Plant). Start it early, give it lots of space in planting out, at least three feet square, a good plant food, and it will bloom from July until frost, growing four to five feet high.

For the rockgarden, a fine little annual, the DAHLBERG DAISY, is extremely useful. It is a real gem, four inches high, with a myriad of little yellow flowers and fern-like leaves.

As for the marigolds, so many new ones have come on the market, that selection is quite difficult. Outstanding in the dwarfs is YELLOW PYGMY, an excellent, compact border plant with wonderful green foliage. It is six to eight inches high, and flowers in canary yellow. BUTTERBALL is another attractive dwarf in the French Harmony type.

In the large ones, I recommend MAMMOTH MUM MARIGOLD, an enormous incurved, chrysanthemum-like flower on long stems, five inches across if disbudding is done; also the varieties GOLDEN BEDDER, LIME-LIGHT and MAYLING. This year's prize winners in the American selections are: FLASH MARIGOLD, single, two-colour effect of old gold and mahogany red. It is very prolific and early but changeable in colour, so that its

main value is indoor decoration. The second prize winner is REAL GOLD MARIGOLD, the largest flowered marigold of the carnation type, four to five inches across, height two feet. Marigolds are voracious feeders, and if they lack food, lots of water and a moderate temperature results may not measure up.

Though several new strains of vegetables have been advertised in recent years, I consider it advisable to stick to most of the varieties which have proven quite satisfactory for our climate. The only novelties that I like to mention are:

ASPARAGUS PARADISE, producing a crop one year earlier than most varieties, and yielding more heavily.

LETTUCE GREAT LAKES, standing heat and sun better than any other variety. The dwarf, stringless bean, KEYSTONIAN, the Pole snap bean, POTOMAC, and the excellent, small-sized melon for home use, LOWDEN'S HONEY GOLD. Many other imported novelties are not better than the fine quality products grown in our own agricultural stations, and which are too often overlooked.

A timely subject is the growing of outdoor chrysanthemums, which is not well understood by the majority of amateur gardeners. The chrysanthemum is a rank weed, sending out underground stems quite far from the base, so that a one-year-old plant covers a real patch the second year. This underground growing slows up the flowering season, and is the main reason why so many chrysanthemums are flowering too late. In order to have good results we should follow as nearly as possible the method used by nurserymen, who take up their plants, sometimes in the fall and propagate in greenhouses and frames by cutting, and then sell them as stock plants in spring. However, amateurs need not go through all this trouble.

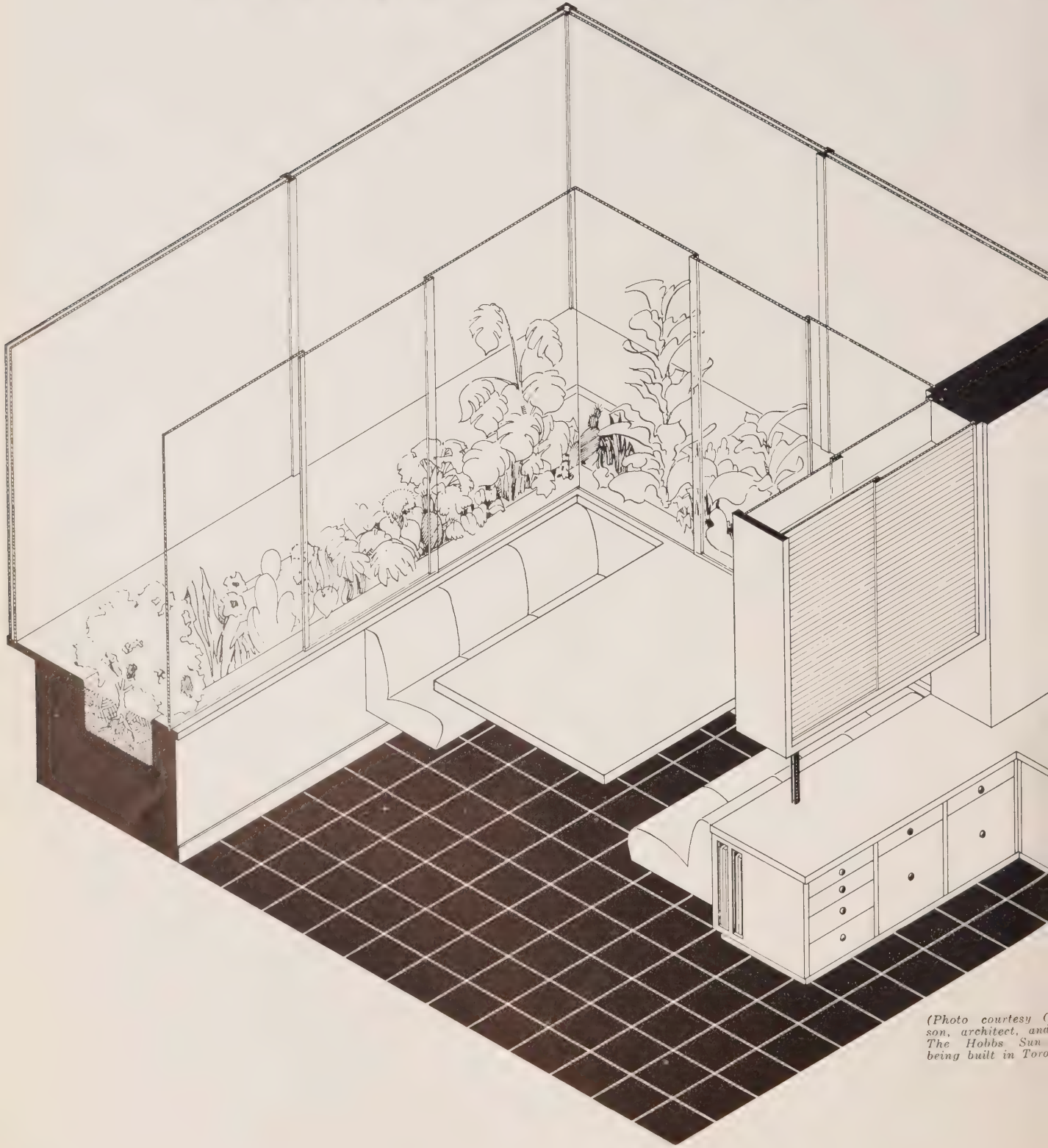
Early in spring, as soon as the plants start growing, they should be taken up, divided and transplanted. Two or three good shoots may be planted together. If properly handled this will make a nice flowering plant in one season.

Chrysanthemums can stand a large amount of humus and fertilizer. Once the replanted shoots are five inches high, the tops should be pinched off, and the operation repeated a few weeks later. This treatment will provide good, bushy plants and early bloom, if early hardy border varieties are used. These flowers are excellent for house decoration. CHAMPD'OR, LAVENDER LADY, OCONTO, SHERIDAN'S INTRODUCTIONS, the pompon type RUBY, WHITE GULL, JEWEL and others are all excellent acquisitions.

Though cushion mums and Azaleamums are very much advertised at present, these varieties are best for mass-effect in a landscape. But as a cut flower they are not so attractive because most of the flowers are deformed and have a shaggy appearance.

To close, let me say that pruning of shrubs should be done according to their time of flowering. All the spring-flowering shrubs should be pruned after flowering in summer, NOT NOW, and all the late or fall-flowering shrubs need pruning in spring. Follow these directions and you will not cut the flower heads.

TOMORROW'S



(Photo courtesy of
son, architect, and
The Hobbs Sun
being built in Toronto)

Blue Heavens"



(Photo courtesy of "Canadian Homes and Gardens.")

THIS LOOKS like a very pleasant environment (left) in which to enjoy one's bacon and eggs. It's a streamlined version of a breakfast alcove and kitchen unit with neat compartments and glass-fronted shelves. Sunny alcoves, architects say, will be a feature of many post-war homes.

THIS YOUNG lady appears to have a firm grasp of an architect's conception of one of tomorrow's homes. This particular "Blue Heaven" is shown from the back and emphasizes a solar roof and sunny windows combined with simplicity of design.

GLITTERING "Castles In The Air," as illustrated in tiny tots' stories about handsome princes and beautiful princesses, are just as remote as some of the popular conceptions of "The Home of Tomorrow."

This fact is definitely emphasized by many eminent authorities on the subject of home architecture and home building.

There are, however, a number of points on which these authorities agree. The "Home of Tomorrow," when it does arrive, will reveal a number of new and interesting features in general design. They agree also that electricity will have a still greater role to play in the post-war home in the form of new conveniences, and in providing the kind of illumination which will be both adequate and pleasing. It is also true that many new materials will be

used by to-morrow's home builders—materials which, they say, will enhance the all-round beauty and livability of that "cottage in the country".

Because a very large percentage of Canadians are hanging on to their victory bonds and buying as many more as possible, to invest in homes in the future, Hydro News set out to get some first-hand facts on the how, why, what and when of to-morrow's "Blue Heavens."

The story seems to add up to this:

Many of today's princes are doing battle with the Germans and Japs. Their princesses, in many cases, have pulled on overalls and are doing a fine war job on the home front. When they get through with the business of war, these princes and princesses are going to invest some of their nest eggs in a "nest". They are not going

to be interested in "Castles In The Air" unless architects and builders can do something about getting these castles down to earth on a down-payment-and-so-much-a-month basis.

Considerable Confusion

Hydro News was informed that there has been a considerable amount of confusion in the minds of the public, on this subject of homes. They have been encouraged in the vague, general belief that the minute the war is over, there will appear, virtually out of the ground, houses for everyone, strange in shape, glittering with glass, plastic and steel and bristling with wonder-making gadgets. One ecstatic home department in a magazine referred to an arm chair cleverly concealing an electric oven in the arm, so that the housewife could, in theory, sit and knit and attend to the roast for dinner without moving an inch. Builders and architects with a more realistic point of view, feel that nonsense like this is hardly fair to the public—to the patient men and women who have been going through the hard war years with poor housing conditions, shoddy equipment and lack of supplies. These people, thinking wistfully of their post-war houses and faced with a deluge of Utopian dream pictures, are beginning to wonder what they may actually expect. They want reassurance that the house they can get will be a more convenient and comfortable place in which to live, and less talk of the all-glass or all-chromium house with ovens artfully concealed in chair arms.

Architects are agreed on one thing. And that is that the post-war house is going to be different. Some of the reasons they give are, in the first place, that the public want something better than they have had. Houses built since the depression, it is stated, have not been particularly satisfactory; they have been too small and too often have had to be built "on the cheap." People are more than ready for something new. Builders, Hydro News was



Photo courtesy G. S. Adamson, architect

TO REALLY have a place in the sun, post-war owners may be looking for a home which has a solar roof and large glass areas. This is an exterior view of a dwelling which is designed to admit all available sunlight.

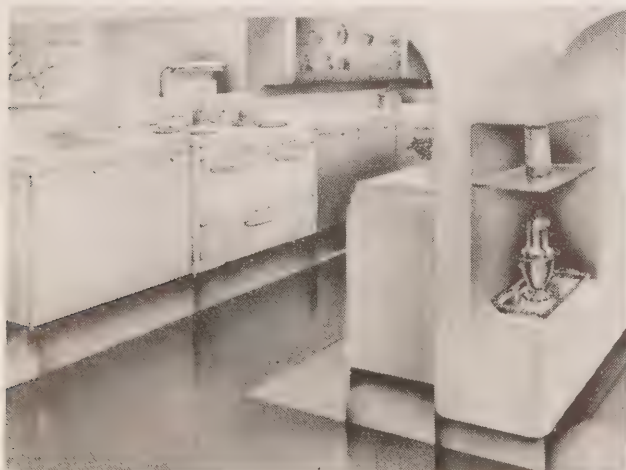


Photo courtesy Mofitts Limited.

IN THE streamlined kitchen or "work centre" of the post-war home, the accent will be on compact, built-in units, more efficient lighting and ample window space, with easy access to appliances.

informed, will have new and perfected materials to work with and they are, right now, getting excellent experience in turning out prefabricated units, which will be featured in the future. At the same time, new ideas of the professional architect are becoming more acceptable, and the architect will have a chance to go ahead and turn out practical, usable, small house plans.

If there are to be changes, then, what are they to be and when may we expect to see them? Architects must, necessarily, be cautious when making statements on these subjects. On the second question they are inclined to advise caution. For the first years after the war, they say, the general designs will be much in the tradition that we know. The first improvements will be with the mechanism and fixtures. Later will come the exterior changes. But when the new exterior comes, the architects say, it will not be just another change in the theme of the Cape Cod Cottage or the Colonial House!

But what are the changes to be? The opinions of various architects point to a sort of composite house. Probably it will be one-storey high, with a pitched or flat roof. Its lines will be simple and clean, and there will be large wall areas of glass or glass brick, and a roof arranged to catch and trap all the available sunlight. There are likely to be three bedrooms and two bathrooms. Although the lot will be moderate in size, the house will be

set on an angle so that the large window areas won't face the next lot directly and the neighbours won't be able to do any "peeking." There will probably be no basement, or if there is one, it will be small. New mechanical equipment will be less bulky and architects agree that the old basement storage space, generally speaking, could be better and more cheaply provided elsewhere. It is also said that a number of prefabricated units will be incorporated into the house and that the equipment will be better designed and more efficient. One of the most popular items will be controlled ventilation to produce a dustless interior.

Panel Heating System

On sunny days the house will be heated by the sun. On cloudy days and at night by panel heating. This is a system of steam or water heating provided through pipes laid in concrete under the floors or in the walls or even in the ceiling. It heats the walls and floor rather than the air and has been proved to be both satisfactory and comfortable. As a matter of fact the Romans first used the idea, and, in medieval Europe several castles allowed themselves the luxury of warm air passing through tubes

and ducts under the floor. But it is only recently that builders have adapted it for modern use.

The planning of inside floor space is one way the modern architect can best show his skill. He can organize space so that a moderate-sized room looks uncrowded and restfully spacious. Also he can create built-in amenities apparently out of nothing. The rooms in the "Home of Tomorrow" will all be planned with care to make the maximum use of space.

One new idea is to have flexible partitions. Another is to have rooms with combined uses so that there might be a living-dining room plus kitchen, or a kitchen-dining room plus living room. One plan, that is becoming popular, is a new streamlined version of the old-fashioned kitchen-living-dining room. This would be one large room with perhaps counter height partitions and with a wealth of storage space. At any rate, the living part of the house will be organized for comfort and convenience plus beauty and livability.

Building experts say that one of the first changes will be in the use of prefabricated units, that is sections of equipment that can be built more quickly and efficiently in a factory, easily handled in sub-assemblies and then incorporated into building sites. They will be made at

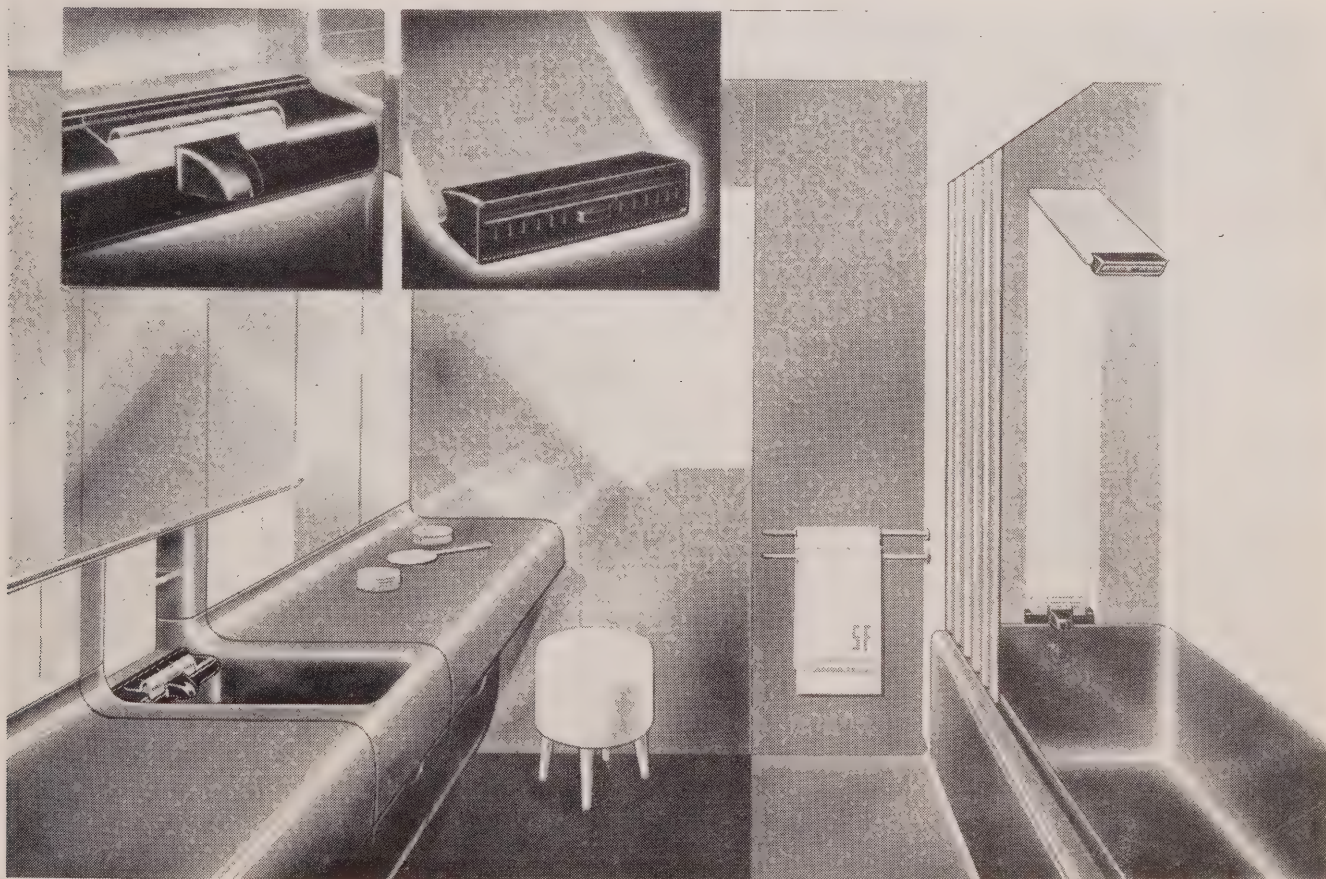


Photo courtesy Durez Plastics and Chemical Inc.

IT LOOKS as if the bathroom basso will have plenty to sing about if this is a sample of the lather lounge which will be found in tomorrow's cottage in the country. It has plenty of neat cupboard space, rounded corners for easy cleaning and is built in compact units. Judging by the appearance of the plastic fixtures (inset) even Junior will find washing a pleasure.

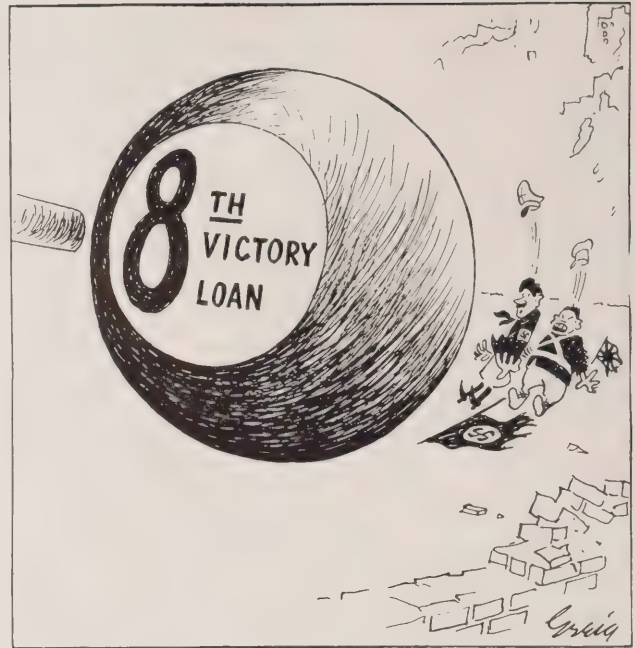
first to fit into conventional plans. The most popular will be for the kitchen, the bathroom and the cupboards.

The general tendency in the bedroom, the architect says, will be for the actual sleeping quarters to become smaller and the dressing room to become larger and to be equipped with every shape and size of cupboard that the feminine mind could conceive. The cupboards will have raised floors, rounded corners for easy cleaning, moth repellent lining, built-in drawers, and there will be shapes and sizes to take care of all the wide variety of clothing and belongings that a family inevitably accumulates.

Designers are working on a complete bathroom unit that can be built in a factory, that is, a unit containing all the usual bathroom fixtures but built in a continuous piece. It will be very carefully designed to give the greatest efficiency in the most compact form. There will be no seams to catch the dirt and the all-rounded corners will make cleaning easy. Because of this development, builders are hopeful that it will be practical for the small or medium-sized house to have more than one bathroom. Complaints of present-day homemakers have reached the ears of the architect, who promises for the post-war bathroom, hot towel racks, adjustable shower taps that will do away with the horrid possibility of being scalded or frozen in the morning shower, lots more bathroom cupboards and medicine shelves and a proper place to dry (and hide!) the inevitable nightly lingerie wash. All this and more the architect promises, for he contends that it's just as cheap and easy to design efficiently as to design inefficiently.

Woman's "Work Centre"

The kitchen is another place that is due for a change—it even has a different name and is now dignified by the term "work centre." Whatever it's called, it must, at any rate, be as efficient and attractive as possible, bearing in mind that the woman of the house spends a great part of her life in it. We have already been introduced to the "streamlined" kitchens with continuous counter-high cabinets. Architects point out that this still leaves much to be desired. They say there is not enough light, that the cupboards are all at stoop-or-stretch positions and that the work counters are never at a height where the housewife can sit comfortably and work. They promise kitchens with the outer walls unencumbered with cupboards and filled with glass instead, a variety of work heights for different tasks, also better designed equipment. For instance, the bottom of the sink, they say, is still six inches lower than experts assert it should be—simply because no one has devised a way to harmonize a higher rim and drainboards with the surrounding cabinet work. This could all be planned as a unit. The kitchen with its sink, cupboards, stove and refrigerator becomes a pre-fabricated, standardized unit embodying the results of painstaking design and effort. The stove and refrigerator both need overhauling, they say. The prewar refrigerator, they claim, is still too deep and is more suitable for a game of hide-and-seek than a place to store food. It also "spills its cold" when the door is open. Refrigerators of the future will probably be made wider, shallow at one end and deep at the other so you won't need to remove all the contents to get at one jar. The stove, they promise, will



have an oven at a convenient height so that an attitude of prayer will not have to be assumed in order to grill the steaks for dinner.

Electricity will be playing an increasingly important role in this house of the future. It will provide both means of communication and entertainment, in the telephone, radio, gramophone and television. There will be improved lighting for here as in the other departments, "functionalism" will be the keynote and the lighting will be chosen first because it is adequate for seeing and, secondly, because it is decorative. This is in complete reverse to the days when the rose shaded lamp with the fringe cast a small circle of poor light but at least was considered elegant. Experts expect that fluorescent lighting will have a more general use. One of its advantages is that the fixtures can be planned and built right into the room, doing away completely with the old-fashioned and clumsy suspended fixtures, and also achieving more dramatic and attractive effects. Also the fluorescent lights give a broader distribution of light and less chance of glare.

There will be more and better electrical equipment everywhere, especially in the kitchen. Again the warning comes that we need not expect revolutionary designs at first. The first job will be to improve the efficiency of present models. The general tendencies, according to authorities, will be to have more automatic fixtures, automatic irons, automatic toasters and so on. They are talking of a miniature steam table for the private house where things can easily be kept warm; also of a deep freezer which can be part of the general kitchen unit.

No, this house of the future is not going to appear at the wave of a wand. But it will come, and it is worth waiting and saving for. So in the meantime war bonds must be bought and safely tucked away until peace comes and money can be spent with a clear conscience.



ONTARIO Hydro-Electric Club's twenty-third annual dance was held at the Club Top Hat, Toronto, on March 2.

Proceeds from the event, over \$200, will be used by the Ontario Hydro Girls' Club to provide comforts for the boys at Christie Street Military Hospital, Toronto.

Members of the dance committee are: Fred Pope, chairman; Wilf Morris, Roy Taylor, George Taylor, Jean Glover and Marion Corby.



INCLUDED IN the centre illustration, left to right are: Mr. and Mrs. Roy Taylor, Mrs. Wilf Morris, R. L. Hearn, Miss M. Hearn, Wilf Morris, Mrs. and Mr. Fred Pope, Mr. and Mrs. J. Savage, Jack Statham, Mr. and Mrs. F. Reid, Mr. and Mrs. J. F. Scace, Mrs. and Mr. George Taylor.



THE LOWER shot was taken while the entertainment was in full swing. This group includes: Mr. and Mrs. Percy Davis, Mr. and Mrs. Doug Elliott, and Fred Wilson.

QUARTER CENTURY CLUB MEMBERS

NOW TOTAL OVER SEVEN HUNDRED

THIS year 163 names will be added to the membership scroll of the Ontario Hydro Quarter Century Club, bringing the total well over 700.

In making this announcement, S. L. Eisenhofer, secretary of the club, remarked: "Our membership now represents more than 18,000 years of loyal service to the Commission and to the people of this province. Back of that service is something which is more than material consideration. The many employees, who have served Hydro faithfully over a long period of years, have made a very important contribution to the progress of Ontario's public ownership enterprise. In rendering that service these employees have the satisfaction of knowing that their efforts have been well worthwhile."

Mr. Eisenhofer also pointed out that the interest of the H.E.P.C. in the welfare of its employees had been an important factor in inspiring this type of faithful service.

The following are the names of those eligible to receive certificates and gold buttons during 1945:

LADIES

NAME	DEPARTMENT	LOCATION
Dixon, Catherine F.	Elec. Inspec.	Toronto
Elrick, Daisy J.	Accounting	Toronto
Holtby, Mildred Mary	Filing	Toronto
Johnson, Etta Edna	Treasury	Toronto
MacKenzie, Evelyn G.	Municipal	Toronto
McKenzie, E. B.	Municipal	Toronto
Peden, Eva M.	Accounting	Toronto
Russell, Mary J.	Accounting	Toronto
Train, Muriel Gertrude	Stenographic	Toronto
Williamson, Vivian	Executive	Toronto

MEN

NAME	DEPARTMENT	LOCATION
Abbott, Gordon Anderson	Operating	Toronto
Aitchison, Thomas Albert	Operating	Kitchener
Anderson, Harold Fredrick	Construction	Toronto
Andrews, Frank	Operating	Toronto
Armbrust, Elwood	Operating	St. Catharines
Armstrong, Archibald R.	Elec. Inspec.	Toronto
Armstrong, Guy Oswald	Operating	Fraserdale
Ayris, Harold Joseph	Accounting	Toronto
Badgley, Wm. W. E.	Operating	Campbellford
Baird, John George	Municipal	Toronto
Baker, Herbert Clarence	Accounting	Toronto
Beckett, Walter	Operating	Niagara Falls
Beckett, Whitson	Operating	Stamford Centre
Bell, George Edward	Operating	Toronto
Betts, Robert Allan	Operating	Niagara Falls
Beveridge, Andrew Richard	Accounting	Toronto
Boot, Ernest	Operating	Chippawa
Brooks, Lupton	Accounting	Toronto
Brown, Roy Ellis	Accounting	Toronto
Buffett, William Albert	Elec. Eng.	Toronto
Byrne, Frank Hugh	Operating	Niagara Falls
Carmichael, Duncan A.	Elec. Eng.	Toronto

Chapple, Frederick James	Accounting	Toronto
Chevers, William John	Operating	Niagara Falls
Choate, William Edward	Accounting	Toronto
Clary, John William	Operating	Niagara Falls
Coulby, William	Operating	Belleville
Croskery, D. J.	Construction	Toronto
Crowhurst, Rowland E.	Operating	Toronto
Dacier, Wilfrid	Operating	Queenston
Dalmer, Frederick W. T.	Operating	Niagara Falls
Daniels, Harry Samuel	Operating	Hamilton
Darrell, Robert Paul	Munic. Audit.	Toronto
Davidson, Frank Bertram	Operating	Preston
Douglas, Archibald Johnston	Operating	Preston
Drew, Charles John	Operating	Toronto
Ewart, William	Operating	Niagara Falls
Falkner, Norman Arthur	Distribution	Toronto
Farquhar, William	Accounting	Toronto
Fear, S. Lorne W.	Elec. Eng.	Toronto
Ferrell, Albert Henry	Operating	Hamilton
Folster, David Kirkness	Operating	Niagara Falls
Fraser, Victor E. H.	Operating	Niagara Falls
Gallagher, Norman M.	Operating	Toronto
Geddes, Walter Robert	Operating	Smiths Falls
Gourlie, John Leonard	Accounting	Toronto
Greer, Arthur Ernest	Elec. Eng.	Toronto
Haggerty, Warren James	Operating	Trenton
Hall, George	Operating	Niagara Falls
Halsey, Alfred E.	Accounting	Toronto
Harris, Fredrick Archibald	Accounting	Toronto
Harshaw, William J. A.	Operating	Hamilton
Henderson, John	Purchasing	Cobourg
Hendry, Murray Calder	Hydraulic	Toronto
Henry, Frank	Operating	Niagara Falls
Herchmer, Frederick James	Operating	Niagara Falls
Higginson, Robert William	Operating	Campbellford
Hirst, Lawrence	Stores	Toronto
Hiscocks, Jesse	Operating	Niagara Falls
Hoey, Alexander B.	Operating	Niagara Falls
Hoskin, William Frederick	Operating	Aldershot
Jones, Edward Bruce	Operating	Sarnia
Jones, Reginald Elsdon	Elec. Eng.	Toronto
Kane, Orville Delbert	Operating	Chippawa
Kennedy, David	Operating	Niagara Falls
King, Ruben George	Operating	Toronto
Kleiser, Otto H.	Accounting	Toronto
Lang, Thomas Roland	Test. & Inspec.	Toronto
Lee, Alfred Ernest	Operating	Niagara Falls
Lee, Percy Oswald	Operating	Niagara Falls
Lightbody, Hugh W.	Purchasing	Toronto
Lindsay, Thomas J.	Emp. Relations	Toronto
Lloyd, Arthur Henry	Mun. Eng.	Picton
Locke, Lester Sifton	Accounting	Toronto
Love, Alexander	Operating	Niagara Falls
Lumgair, George M. B.	Accounting	Toronto
Maddock, Edwin Graham	Municipal	Toronto
Martin, John Sinclair	Elec. Inspec.	Kitchener
Masales, Stanley R.	Operating	Niagara Falls
Maslen, William	Operating	Niagara Falls
Mason, Frank H. A.	Elec. Eng.	Toronto
Middleton, Horace R. H.	Operating	Dundas
Misener, Levi Leslie	Operating	Niagara Falls
Montague, John Russell	Hydraulic	Toronto
Montgomery, Andrew H.	Operating	Toronto
Morden, Reuben Martin	Operating	St. Thomas

(Continued on next page)

AMONG FIRST SIX NURSES TO SET FOOT IN GERMANY

**Lieut. N/S Julia Johnson Serving With Advance
Surgical Unit—Lieut. N/S Frances L. Powell
With R.C.N. At An Eastern Hospital**

JULIA A. JOHNSON, now Lieut. N/S of the Royal Canadian Army Medical Corps, who will be remembered by Hydro folk at the Abitibi Canyon, Rat Rapids and Ear Falls developments and at head office, was one of the first six Canadian nurses to set foot on German soil.

Another former Commission nurse, Lieut. N/S **FRANCES L. POWELL**, who, also, was widely known among members of the Hydro family, is now serving with the Royal Canadian Navy



J. A. Johnson

at an eastern Canadian hospital.

Reports on Lieut. Johnson's arrival in Germany reveal that she is with one of the surgical units which keep close to the front line, moving at approximately the same pace as the advancing army in order to take care of wounded men as quickly as possible. In the early stages of the war, Mrs. Johnson served as a nursing sister with the R.C.A.F., and married an officer in the R.C.A.F. who lost his life in an air accident.



F. L. Powell

REMEMBER ?



SNOW SCENES such as these, with temperatures coasting from 12 degrees to 34 degrees below zero, give some idea of the problems presented by "ol' man winter" this year. These particular pictures were taken on a surveying job near Pembroke in the Ottawa Valley by Corrie LeGris of the H.E.P.C. property department. The height of the snow bank is graphically illustrated in the right hand picture showing Jim Swalm in a "ready to take off position." He is shown again (right) sitting on the running board of the car with Hugh Wilkins and Jack Moran, all of the property department.

QUARTER CENTURY CLUB

(Continued from previous page)

Morningstar, Louis	Operating	Chippawa
Morris, Henry Robert	Elec. Eng.	Toronto
Murray, Robert Turner	Operating	Niagara Falls
MacGillivray, David G.	Operating	Niagara Falls
MacKay, J. Harold	Elec. Eng.	Toronto
McAdam, David Carlyle	Emp. Relations	Toronto
McBurney, Jacob Earl	Operating	Niagara Falls
McCann, William Henry	Operating	London
McPhee, Thomas S.	Operating	Toronto
McVeigh, James	Operating	Niagara Falls
Nesbitt, William	Admin. Bldg.	Toronto
Nicol, Thomas W. A.	Operating	Dalhousie Lake
Orr, Donald F.	Accounting	Toronto
Owen, Ernest Charles	Operating	Niagara Falls
Oeppling, William	Operating	Chippawa
Ogle, Thomas Gowdy	Stores	Toronto
Pae, Colin Edward	Operating	Toronto
Patten, Frank Ferguson	Operating	Niagara Falls
Paxton, Gardner Simpson	Operating	St. Davids
Pearce, Albert Edwin	Operating	Toronto
Perkins, Harold Weir	Operating	Stamford Centre
Perks, Thomas L.	Operating	Niagara Falls
Picard, Arthur Joseph	Inspection	Toronto
Pope, Frederic B.	Accounting	Toronto
Putman, Clarence O'Dell	Operating	New Toronto
Pyburn, Benjamin	Munic. Audit.	Toronto
Rennie, William Hutton	Operating	Niagara Falls
Roach, Charles Edwin	Operating	Niagara Falls
Robertson, John Alexander	Operating	Niagara Falls
Robinson, Edward	Operating	Niagara Falls
Roe, Reginald K. H.	Accounting	Toronto
Rolfe, William	Operating	Niagara Falls
Rolston, John Hamilton	Operating	Niagara Falls
Sawyer, Reece	Operating	Toronto
Scott, Walter Edward	Test. & Inspec.	Strachan Ave.
Shea, Francis Lazor	Operating	Niagara Falls
Shepard, Walter Harvey	Operating	Niagara Falls
Simmons, Allen Floyd	Operating	Niagara Falls
Simpson, James Porter	Accounting	Toronto
Simson, George Francis	Elec. Eng.	Toronto
Sinclair, George Erie	Operating	Niagara Falls
Smeaton, William	Operating	Niagara Falls
Smith, Harry Hart	Operating	Niagara Falls
Smith, James Robert	Elec. Eng.	Toronto
Smith, Peter	Operating	Niagara Falls
Stevens, Alfred James	Operating	Niagara Falls
Strangways, Alexander W.	Operating	Toronto
Stuart, Frederick Ivan	Operating	Niagara Falls
Talorico, William Antonio	Operating	Niagara Falls
Taylor, Roy Edwin	Laboratory	Toronto
Thompson, George Alexander	Operating	Niagara Falls
Thomson, William S. E.	Operating	Niagara Falls
Tindale, Charles E. W.	Operating	Toronto
Tordiffe, Hugh Betton	Operating	Niagara Falls
Truman, William	Operating	Niagara Falls
Turner, George Arthur	Operating	Niagara Falls
Vernon, William	Operating	Queenston
Volkman, William	Operating	Toronto
Wailling, Henry James	Operating	Niagara Falls
Weare, William E.	Operating	Niagara Falls
White, John R. R.	Operating	Niagara Falls
Wild, Harry B.	Operating	Toronto
Williams, Herbert M.	Operating	Niagara Falls
Wilson, Arthur Leslie	Elec. Eng.	Toronto
Yeo, Charles Edward	Operating	Toronto
Young, Ernest Clark	Operating	Niagara Falls
Young, Lawrence H.	Operating	Niagara Falls
Zoellner, Charles M.	Operating	Niagara Falls

FIVE-YEAR PLAN

(Continued from page 8)

in-aid to cover fifty per cent of the capital cost of distribution facilities and meet any losses, should they occur, from reduction of service charges and unification of rural rates showed its intention of continuing its policy of assisting the extension of rural electrical service, Mr. Challies stated.

He declared that the success of the plan was based upon the closest co-operation among the Commission, the farmer and the electrical supplier. It had been estimated, he said, that the five-year plan would entail the installation of large numbers of appliances, including 18,800 ranges; 58,500 washers; 6,950 flat-rate water heaters; 90,000 irons; 24,600 refrigerators and 95,500 radios, in rural homes; and farm equipment installations including 5,450 grain grinders; 3,150 milking machines; 7,400 water pumps and 2,300 milk coolers.

Continuing, Mr. Challies referred to the uniform rural rates introduced in January of 1944, and pointed out that although consumption by farm consumers had not increased very much during the past year over 1943, the average monthly bill paid had dropped from \$3.81 in 1943 to \$3.39 in 1944, and that the average cost per kilowatt-hour had been 2.42 cents in 1943, and 2.13 cents last year.

In the case of hamlet consumers, the average monthly consumption had increased from 87.6 kilowatt-hours in 1943 to 119 kilowatt-hours in 1944, while the average monthly bills for these years were \$2.57 and \$2.89 respectively. The average cost per kilowatt-hour, he pointed out, had dropped from 2.93 cents in 1943 to 2.45 cents in 1944.

"These figures clearly indicate," Mr. Challies said, "that with the increasing use of Hydro, the cost to the rural consumer is materially reduced."

He next cited statistics which, he said, showed that relatively few rural Hydro consumers were putting electricity to the greatest possible use, and pointed out that the average investments per farm consumer in power equipment and in appliances were \$92.67 and \$257.13 respectively. "It is evident," he said, "that with the important exception of washing machines, the only appliances in extensive use are the smaller ones. All other appliances and equipment have a relatively low saturation."

Continuing, Commissioner Challies gave a general outline of how the Commission intended to approach the five-year plan, stating that the best promotional methods would be employed to bring details of the plan to rural Ontario. An educational programme, designed to familiarize the farmer with the objectives of the plan and its potentialities, and to assist him in all possible ways to obtain the maximum benefits of electrification, formed an integral part of the campaign, he said.

Mr. Challies also stated that the Commission would use a number of specially-equipped motor coaches, operated by trained crews, to display and demonstrate both home and farm equipment in all parts of rural Ontario.

Details of the five-year plan, he announced, would be brought to rural consumers through the media of newspapers and magazines, direct mail and other literature. At the same time, sound motion pictures will be shown at

OBJECTIVE OF \$12,000 SET BY O.H.E. CLUB

**R. E. Brown Is Elected President
For Ensuing Year**

FOR the year 1945, the Ontario Hydro-Electric Club has set a financial objective of \$12,000, which will be used to carry on the club's war activities, according to R. E. Brown, president.

The head office subscriptions are estimated at \$8,200, or \$900 in excess of last year's. This extra money will be used to partially offset \$1,000 budgetted for the Ontario Hydro Girls' Club, which was inaugurated last December. The remaining \$100 will be raised by the girls themselves.

The 1945 budget includes Toronto area contributions \$8,200; field branch \$2,700; dance, bridge, miscellaneous \$250; balance forward from 1944, \$850.

Members of the club's executive committee for the ensuing year are: honorary president, T. H. Hogg, D. Eng.; honorary vice-presidents, Hon. G. H. Challies, Phm.B., M.L.A., and W. Ross Strike; past president, P. T. Seibert; president, R. E. Brown; vice-president, H. C. Davies; general secretary, W. J. Greves; recording secretary, Reta Walsh; treasurer, J. W. Young; ladies' auxiliary, Mrs. Kay Stockwell; ladies' representative, Mrs. Margaret Gahagan; Strachan Avenue representative, W. L. Dymond; soldiers' comforts, A. W. Murdock; Club News, R. E. Taylor.

HORTICULTURAL CLUB DINNER

MEMBERS and friends of the Hydro Horticultural Club are invited to the annual spring dinner which will be held on Friday, April 27, at the Central Y.M.C.A., 40 College street, Toronto, at 5.30 p.m.

The programme will include an illustrated talk on "Spring Gardens" by John Hall, president of the Ontario Horticultural Society, and a coloured movie on Algonquin Park, which will be shown by Dan. Gibson and a companion, both of the R.C.A.F.

rural fairs and exhibitions and before agricultural groups to portray the uses of electrical farm equipment.

Mr. Challies said that the plan would be launched as soon as labour and materials were available and that rural Hydro superintendents would co-operate to the fullest extent with the individual consumer in planning the efficient electrification of farms and rural homes.

"The five-year plan is a campaign," Mr. Challies concluded. "Its object is to make Hydro available to more rural residents and to help the farmer in making the most of modern electrical methods. The fulness of its success will depend upon the full co-operation of all parties concerned: the Commission, the farmer and the electrical supplier. Hydro will do its part by harnessing the horsepower and delivering it to the farmer—and it will help him to obtain the fullest possible use of this low-cost electrical service."



HONOUR L. G. DANDENO

LEONARD G. DANDENO, formerly superintendent of the Thunder Bay system, was guest of honour at a dinner recently at the Prince Arthur Hotel, Port Arthur, on the occasion of his departure to take over his new duties as superintendent of the Eastern Ontario division of the Southern Ontario system.

Arranged under the joint auspices of the Port Arthur Public Utilities Commission and the Fort William Hydro-Electric Commission, the dinner was presided over by J. R. Pattison, chairman of the Fort William commission. The programme included addresses by alderman F. Cunningham, Fort William; C. W. Cox, mayor of Port Arthur; and commissioner Sam Ashton, Port Arthur, who presented Mr. Dandeno with a travelling bag.

Others in attendance were: R. B. Chandler, manager, Port Arthur Public Utilities Commission; R. K. Tumelty, Len. J. Dixon, George J. Smith, Dave Reid, G. L. Hood, L. B. Hulko, H. Cook, R. G. Walsh, Dr. M. P. Bengier, M. G. Grover, F. L. Cunningham, Charles E. Rymes, all of Port Arthur; J. R. Pattison, A. C. Adams, J. Blick, C. H. Moors, E. Capstick, A. W. H. Taber, J. Murrie, all of Fort William; J. W. Looney and C. B. Montgomery of Cameron Falls; W. A. Thrasher, Thunder Bay Paper Company; E. Lorne Goodall, Provincial Paper Company; W. L. Bird, Kaministiquia Power Company; S. M. Smith and E. H. Smith of Canadian Westinghouse Company; and S. T. McCavour, Great Lakes Paper Company, Fort William.

W. E. REESOR DIES

WALTER E. REESOR, aged 71, manager of the Lindsay Hydro-Electric System, died recently following a heart attack.

Mr. Reesor was born at Newmarket, where his father, B. F. Reesor, ran a flour mill. Later the Reesors started a steam power plant in Lindsay, which eventually became the Lindsay Hydro-Electric System, with Walter Reesor succeeding his father as manager.

Mr. Reesor was known across Canada as a curler, and gained prominence accompanying the late J. D. Flavelle for six consecutive years to Winnipeg bonspiels. He was past-president of the Lindsay Curling Club, and of the Ontario Curling Association; chairman of the Public Library Board; past-president of the Rotary Club, and Lindsay 20 Club, and a director of the Victoria Trust and Savings Company.



W. E. Reesor

BLOOR STREET "AT HOME"

Approximately \$30.00 was turned over to the Ontario Hydro-Electric Girls' Club from the proceeds of a St. Patrick's at home, held under the auspices of the H.E.P.C. Bloor street construction department and salvage stores, on March 16.

The money will be used to purchase cigarettes for the boys at Christie Street Military Hospital, Toronto.

About 130 attended, and the programme was arranged by Miss Marie O'Rourke, Bill Egan, Walter Chenery, George Champagne and Don Preston.

A. H. ALLIN PASSES

ARTHUR HENRY ALLIN, aged 76, commissioner, Whitby Public Utilities Commission, passed away at his home last month.

Mr. Allin was born and raised in Whitby, and attended Whitby Public and High schools. Later he entered the Ontario College of Pharmacy. After graduating, he worked in Toronto for six years, and then established his own business, which he operated at Whitby for 49 years.

The late Mr. Allin had been associated with the Whitby Public Utilities Commission for the past 31 years, having been chairman for 3 years. He was a member of Composite Lodge, A.F. and A.M., and of Keystone Chapter, Royal Arch Masons. He was also on the Board of Directors of the Ontario Ladies' College, and a director of the Composite Company of Whitby. He took a keen interest in oil and water colour paintings and was the owner of a fine collection.

Surviving are his two sisters, Lillian and Marion, both of Whitby.

ELECT OFFICERS FOR 1945

AT the annual meeting of District No. 8, Ontario Municipal Electric Association, held in Chatham on January 18, the following officers were elected for the ensuing year: honorary presidents: Dr. T. H. Hogg, H.E.P.C. chairman; G. N. Galloway, Sarnia; G. A. Edwards, Windsor; president, John Barnes, Sarnia; vice-president, Charles Austin, Chatham; executive: G. S. Richardson, Tilbury (O.M.E.A. representative); A. P. St. Louis, Riverside; G. A. Edwards, Windsor.

J. W. MOFFATT RETIRES

JOSEPH WILSON MOFFATT, of the H.E.P.C. accounting department, has retired from active duties after having served in the accounts receivable section for over 27 years. His many Hydro friends marked the occasion with the presentation of an easy chair.



Hydro HOME FORUM

by *Edithemma Muir*
HOME ECONOMIST

SPRING HOUSECLEANING! You will be pressing the home artillery equipment into action during spring housecleaning attacks, so it is wise to check them over to prevent a halt in your campaign.

Take the vacuum cleaner: Look up the book of directions which came with your cleaner when it was purchased. If you have lost it, write to the manufacturer and ask for another copy, giving him the serial number of the model you have, or the approximate date when you purchased the machine. This bulletin is valuable because it tells you how to take the best care of the particular cleaner which you own, and how to get the best results.

Check your vacuum cleaner: There may be loose screws which you can tighten, and parts you can clean. Signs of wear should be watched. If it is making unusual noises, if the motor is sparking excessively, or if it is showing any sign of trouble, you need the help of an experienced service man.

Keep the motor lubricated. If it were purchased several years ago, the directions may tell you to oil the motor. Be sure not to use too much oil for it may damage the motor and may spot your carpet. And do not have the motor running while you oil it. Most of the newer models are grease-lubricated and call for no additional lubrication. However, these should be examined whenever the service man goes over your machine to see that there is an ample supply of grease and that it has not become contaminated with dust.

See that the nozzle is set to give the rug the maximum agitation. It should be high enough to allow the rug to be lifted from the floor by

suction and low enough to obtain a good seal. Too low an adjustment makes the cleaner hard to push and wears the rug. Some manufacturers suggest a nozzle adjustment of three-sixteenths of an inch above the pile, which can be determined by sliding a ruler about this thickness under the nozzle lips.

It is important that the dirt container be cleaned out regularly. If the fabric of bag becomes clogged with dirt, the cleaner cannot work effectively. Empty every time you use the cleaner. Shake vigorously to dislodge the fine dust clinging to the fabric. The bag should be turned wrong side out occasionally and brushed with a whisk broom. Washing or dry cleaning tend to remove sizing and ruin a container.

Remove hair and threads frequently. If long threads are tightly bound around the cylinder and caught in the brushes, clip them in several places and the short pieces can be pulled out easily. A considerable accumulation of such threads and hairs will cause an increase in current necessary to run the motor, and shorten the life of the wiring in the motor.

Keep the brush adjusted so that it extends slightly below the nozzle; when bristles are worn they will not sweep thoroughly.

If the rubber belt has become stretched and is loose, you will notice that your cleaner does not pick up threads and lint. Replace the belt at this point without waiting for it to break.

Do not attempt to sweep up sharp objects like pins, hairpins, paper clips, nails and coins. They are likely to become wedged between the belt and the pulley or to nick the fan. A

damaged fan puts it off balance and is the cause of noisiness.

Your cleaner should be kept cool and dry. Store away from registers and radiators and where it is not damp.

DON'T NEGLECT MEALS

Those three meals a day can't be neglected when housecleaning is in full sway, so plan menus that require minimum preparation and time; one in which sufficient leftovers can take care of the next day's needs.

Meat loaf, baked potatoes and diced carrots, and maple custard with orange cake may be transformed into the next day's menu as cold meat for salad, stuffed baked potatoes, creamed carrots and maple trifle. This is a splendid example of extra foods prepared so there is little loss of nutritive value.

Mother's idea is, that when things are not running smoothly at housecleaning times, something special is concocted to take minds off the spring upheaval. A casserole of chicken and vegetables or a stewing fowl cooked tender and topped with light, fluffy dumplings, some tender stalks of buttered asparagus, grated turnip salad, baked red rhubarb with bran muffins make a colorful meal and a delicious one.

Pot roast serves the purpose too in housecleaning time as meat and vegetables can be cooked in one pot, thus saving dishes, and it doesn't demand much preparation or watching. But for the last minute rush at eating time, omelettes, or creamed vegetables on toast or cheese casseroles are cooked in short order.

Dessert orders are condensed into simple dishes when you use commercially-packaged powders, frozen fruit or home canned fruit.

Thus a word to the wise is sufficient.

FURTHER RURAL RATE CUT EFFECTIVE AFTER MAY 1

A FURTHER rate reduction to all rural hydro consumers on the first block of energy from 4 cents to 3.5 cents per kilowatt hour, effective on all bills rendered on or after May 1, 1945, will result in an estimated saving of \$300,000 a year.

In making this announcement, Hon. George H. Challies, vice-chairman of The Hydro-Electric Power Commission of Ontario, said that it had been possible to make the reduction because of a stimulated programme of new services inaugurated during the past year.

Uniform rates for electrical service to rural areas were introduced by the Commission on January 1, 1944, bringing substantial benefits to 97 per cent of all farm and hamlet consumers served by the Commission, and resulting in an estimated saving of \$500,000. The new energy rate of 3.5 cents on the first block, with second and third rates remaining unchanged, will be a substantial saving shared by all rural Hydro consumers, Mr. Challies stated.

PRESUMED DEAD

CHARLES WOODROW HOSTETLER, R.C.A.F., formerly of the H.E.P.C. operating department, who was previously reported missing, has now been presumed dead. At the time of enlistment in August, 1941, Mr. Hostetler was an operator-in-training at Bala.

REPORTED MISSING

JOHN BUCKMASTER, R.C.A.F., formerly of the H.E.P.C. property department, has been reported missing. Mr. Buckmaster was with the Commission from May, 1940, until his enlistment in September, 1942.

KNOWLEDGE IS POWER

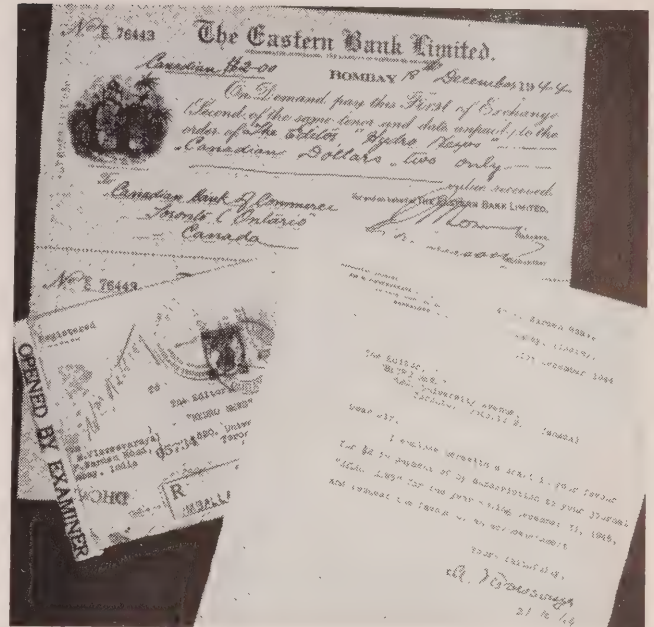
(Continued from page 11)

is the job of the library committee. This committee is composed of six members, representing the various departments of the Commission, and is under the chairmanship of W. P. Dobson, director of research.

Not infrequently, requests are received for mystery stories. Although this department is strictly a technical library, it has a small collection of fiction, chiefly "westerns" and "thrillers," and a few other general books, which are for use in construction camps.

The work of a library is sometimes likened to the rear vision mirror of an automobile. In order to go forward safely, the driver must know what is on the road behind. And so if the work of today is to be done on a sound basis for the future, it is essential to know what has been done in the past. It is the H.E.P.C. library's aim, not only to have a great store of useful information on its shelves, but to aid the person who wishes to find, learn and use that information.

EAST MEETS WEST!



TWO communications of more than passing interest have come across the editor's desk recently, one from India, renewing a subscription to Hydro News, and one from Ontario House, London, England.

The letter reproduced on this page is from Sir Mokshagundum Visvesvaraya, K.C.I.E., LL.D., M.I.C.E., Indian administrator, Uplands, High Ground, Bangalore, who takes a keen interest in Hydro development in Ontario. Sir Mokshagundum has occupied prominent posts in Indian public life, being Dewan of Mysore from 1912 to 1918; chairman of the Indian Economic Enquiry Committee, 1925; member of the Bombay Inner Bay Inquiry Committee, 1926; chairman of the Bombay Irrigation Inquiry Committee, 1938. His published works include "Reconstructing India" and "Planned Economy for India."

The communication from D. A. Stevenson, public relations officer at Ontario House, draws attention to the interest aroused by Hydro publications in the old land. Mr. Stevenson states that between 600 and 700 persons visit the reading room at Ontario House daily, while up to 5,000 service personnel daily make use of the two reading rooms at the Ontario Services Club. Referring to Hydro News, he added: "The beautiful photograph on your January (1945) cover brought nostalgia to myself as well as several other Torontonians who have dropped into my office since I put it up on my wall."

REPORTED KILLED

Tpr. EARL JAMES ELLIOTT MESSING, Queen's Own Rifles, formerly of the H.E.P.C. operating department, has been reported killed in action. At the time of his enlistment in August, 1942, Mr. Messing was employed as a labourer at Niagara Falls.



Lighter Lines

Among the visitors to Cairo just before the war was a lady whose bridge game was a good deal worse than she imagined it to be. One evening she was the partner of a young British engineer who was a keen and skilful player. Whenever she made an atrocious mis-play he would look up at her and pronounce the one word "Assouan."

After the game was finished, she skidded blithely up to her partner.

"Do you mind telling me the meaning of that compliment you paid me?" She smiled sweetly. "Assouan, that's some kind of Turkish delight, isn't it?"

The engineer looked at her. He was still smarting from his losses.

"Assouan, madam. Why that's the biggest dam on the Nile."

* * *

Kindly photographer: "Now, my little man, just keep looking at the birdie in the cage."

Modern Tot: "Rubbish! Pay attention to your exposure, focal length and lighting, or you'll ruin your plate."

* * *

Actor—"I always aim to be the character I play, so I should like real food and drink in that banquet scene."

Theatre Manager—"Then I suppose you will want real poison in that act where you bump yourself off."



"Okay, Walter, here's your ball NOW maybe we'd better see if he's badly hurt!"



"HONEST, I ONLY WANTED TO BUY A BOND.!"

On an April Fool's day some years ago a class of English school boys awaited in breathless suspense the appearance of the master. At last he came in. A titter ran around the room. There was a donkey's head chalked on the back of his gown.

The master, fixing one of the boys with his eye, rapped on the desk with his birch.

"Now," he said, "will the young ass which wiped its face in my gown come up here for its thistles."

* * *

Friend: "So you're not getting married until the fall, Donald. You told me you regarded June as the ideal honeymoon month."

Donald: "It's nae a question of the season, mon. Ye see, Jenny's faither thoughtlessly gie'd her a verra big box o' letter paper wi' her maiden name engraved on the sheets. And noo we'll hae tae wait 'till it's a' used up."

* * *

A waffle, according to our Home Economist, is a pancake with a non-skid tread.

A Nazi broadcaster called Goebbels Told his guys: "If you don't fight, you're rebels."

Berlin was afire,
But his sadist desire
Was to see his men roast on hot pebbles.

* * *

He fell for a girl in a gingham dress,
She looked like a buy as she whispered "yes."

But now she costs him his weekly pay.
She's shopping and shopping the live-long day.

* * *

A certain gentleman tells us he has developed the habit of being able to awaken himself at any hour during the night.

This might be called a triumph of mind over mattress!

* * *

Jack—where did you get that umbrella?

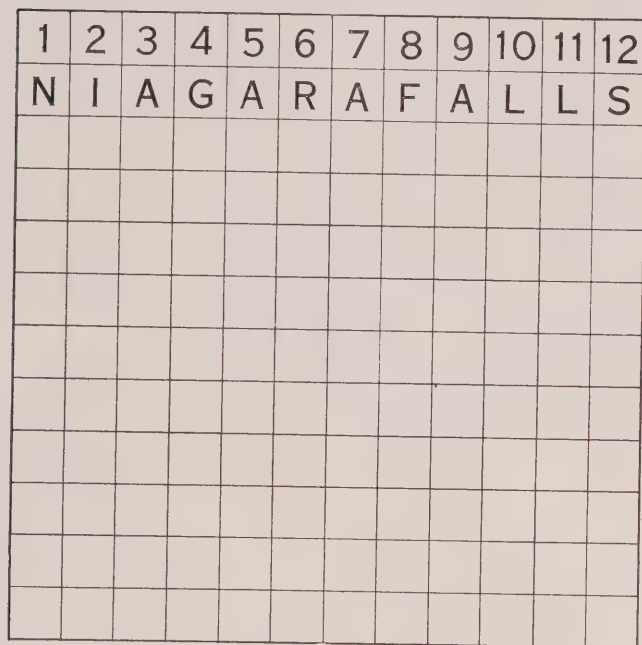
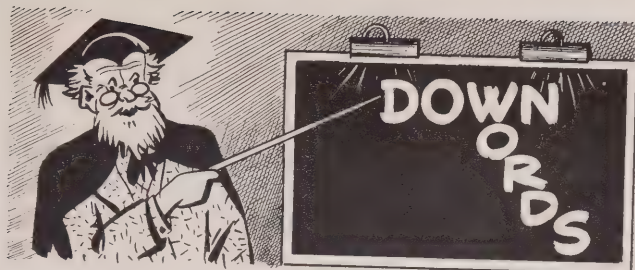
John—It was a gift from sister.

Jack—You told me you hadn't any sisters.

John—I know—but that's what's engraved on the handle.



"... According to the way I've planned my post-war kitchen, you got your feet in the broiler!"



THE temper of Professor P. (for Peter) Perplexus is a little ruffled this month. Some of Hydro News' embryonic (we use the professor's own word) Downword fans have touched him on the academic sore spot by their blatant suggestions that his first puzzle was ridiculously easy. "Make it harder," wrote one fan. "Does the professor think I've never been to school?" asked another. "Does he think I'm just a witless nincompoop?" queries a third. And so on and so on.

As a matter of fact scarcely anyone who sent in an answer had all the words correct. In other words, they jumped at conclusions without too careful consideration of the definitions. In all these puzzles there will be only one word that exactly fits in each case, and readers should remember this in writing down their answers. This month the key words are "Niagara Falls." Let's go.

DEFINITIONS

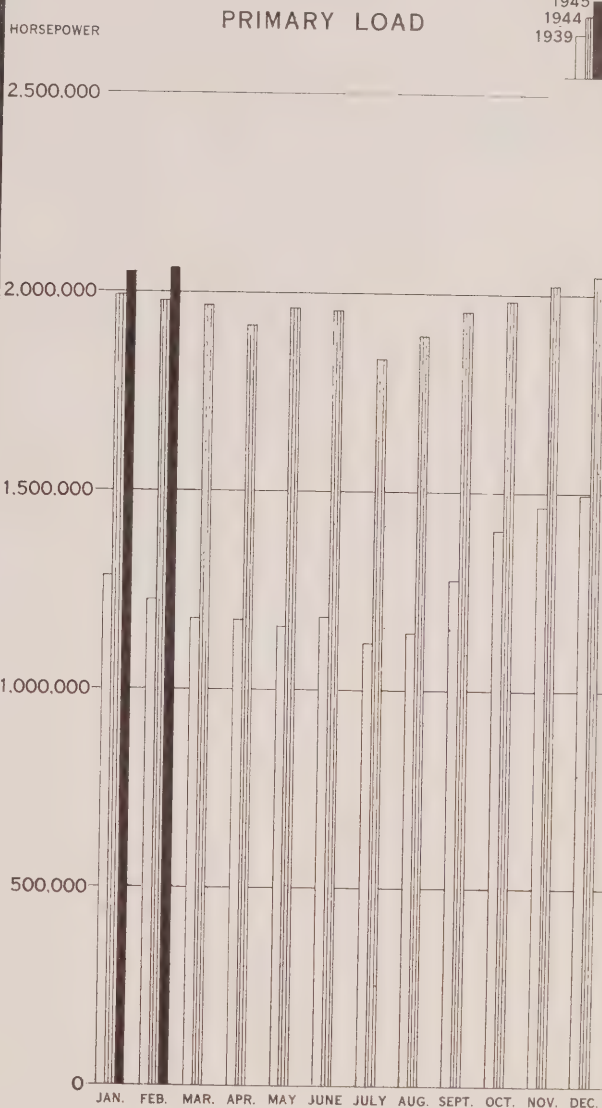
1. Wilhelminaland.
2. The Army couldn't get along without him.
3. If you say Brutus killed Caesar with a Tommy gun, you commit this. (A chronological error; Introduction into a narrative of a person or thing belonging to another period.
4. "Once across the Scottish Border and the gal is mine!"
5. Thirsty Yanks at Remagen went for this spring drink.
6. How a ball-room looks with Hydro lighting.
7. The science of unearthing the past.
8. Any Hitler address before "D" day.
9. In Austria they used to call a princess this.
10. That cute little man in Gulliver's Travels.
11. A two-pip rank.
12. English poet, player and playwright.

LAST MONTH'S SOLUTION

1	2	3	4	5	6	7	8	9	10	11	12	13
H	Y	D	R	O	E	L	E	C	T	R	I	C
I	E	I	E	S	X	O	N	A	R	E	L	A
P	L	S	H	T	A	N	T	T	A	F	L	P
P	L	I	A	E	S	G	E	A	N	R	U	I
O	O	N	B	N	P	I	R	S	S	A	T	T
P	W	T	I	T	E	T	T	T	M	G	I	U
O	H	E	L	A	R	U	A	R	I	E	N	L
T	A	G	I	T	A	D	I	O	S	R	A	A
A	M	R	T	I	T	I	N	I	H	I	T	I
M	M	A	A	O	I	N	I	H	I	T	I	I
U	E	T	T	U	O	A	N	I	O	O	O	O
S	R	E	E	S	N	L	G	C	N	R	N	N

SOUTHERN ONTARIO SYSTEM

EMBRACING NIAGARA, GEORGIAN BAY AND EASTERN ONTARIO DIVISIONS



PRIMARY LOADS

AREA SERVED BY	MAXIMUM 20-MINUTE PEAK H.P.		PER CENT INCREASE
	FEBRUARY, 1945	FEBRUARY, 1944	
SOUTHERN ONTARIO SYSTEM...	2,061,399	1,976,294	+ 4.3
THUNDER BAY SYSTEM	120,107	121,314	- 1.0
NORTHERN ONTARIO PROPERTIES	195,464	182,313	+ 7.2
TOTAL	2,376,970	2,279,921	+ 4.3

PRIMARY AND SECONDARY LOADS

SOUTHERN ONTARIO SYSTEM...	2,092,284	2,089,296	+ 0.1
THUNDER BAY SYSTEM	133,378	127,681	+ 4.5
NORTHERN ONTARIO PROPERTIES	225,297	193,908	+ 16.2
TOTAL	2,450,959	2,410,885	+ 1.7

MUNICIPAL LOADS, JANUARY, 1945

SOUTHERN ONTARIO SYSTEM

NIAGARA DIVISION

(25-Cycle)

	H.P.	Popula- tion		H.P.	Popula- tion		H.P.	Popula- tion
Acton	1,746	1,903	Erie Beach	7	21	Palmerston	632	1,400
Agincourt	237	P.V.	Essex	558	1,886	Paris	2,149	4,604
Ailsa Craig	141	487	Etobicoke	8,678	V.A.	Parkhill	209	1,029
Alvinston	120	649	Exeter	743	1,654	Petrolia	1,028	2,768
Amherstburg	1,011	2,704	Fergus	1,272	2,759	Plattsville	149	P.V.
Ancaster Twp.	468	V.A.	Fonthill	193	860	Point Edward	1,849	1,199
Arkona	72	403	Forest	610	1,562	Port Colborne	1,996	6,928
Aurora	1,361	2,821	Forest Hill	7,973	12,172	Port Credit	1,018	1,934
Aylmer	904	1,985	Galt	12,057	15,126	Port Dalhousie	870	1,599
Ayr	205	760	Georgetown	1,996	2,452	Port Dover	464	1,790
Baden	657	P.V.	Glencoe	214	763	Port Rowan	119	700
Beachville	786	P.V.	Goderich	1,659	4,674	Port Stanley	345	824
Beamsville	471	1,227	Granton	58	P.V.	Preston	4,474	6,656
Belle River	205	836	Grimsby	871	1,988	Princeton	152	P.V.
Blenheim	667	1,873	Guelph	12,706	23,074	Queenston	114	P.V.
Blyth	136	662	Hagersville	482	1,524	Richmond Hill	557	1,295
Bolton	234	629	Hamilton	173,048	164,719	Ridgetown	668	1,986
Bohwell	139	683	Harriston	381	1,292	Riverside	1,327	5,235
Brampton	2,901	6,157	Harrow	550	1,092	Rockwood	128	P.V.
Brantford	23,506	31,622	Hensall	199	686	Rodney	157	758
Brantford Twp.	1,430	V.A.	Hespeler	3,052	2,938	St. Catharines	31,281	34,541
Bridgeport	159	P.V.	Highgate	86	322	St. Clair Beach	90	138
Brigden	80	P.V.	Humberstone	623	2,831	St. George	180	P.V.
Brussels	177	784	Ingersoll	3,420	5,757	St. Jacobs	365	P.V.
Burford	221	P.V.	Jarvis	190	513	St. Marys	1,744	4,009
Burgessville	48	P.V.	Kingsville	746	2,453	St. Thomas	8,682	17,045
Burlington	1,701	3,925	Kitchener	29,869	35,465	Sarnia	6,901	18,599
Burlington Beach	431	1,474	Lambeth	188	P.V.	Scarborough Twp.	5,318	V.A.
Caledonia	428	1,430	LaSalle	282	907	Seaforth	1,034	1,782
Campbellville	43	P.V.	Leamington	1,961	6,048	Simcoe	3,032	6,304
Cayuga	162	700	Listowel	1,486	2,984	Smithville	200	P.V.
Chatham	7,733	17,184	London	45,981	81,567	Springfield	73	382
Chippawa	363	1,228	London Twp.	612	V.A.	Stamford Twp.	2,955	8,275
Clifford	104	491	Long Branch	1,487	4,258	Stoney Creek	256	933
Clinton	652	1,879	Lucan	188	643	Stouffville	303	1,198
Comber	134	P.V.	Lynden	120	P.V.	Stratford	7,191	17,163
Cottam	96	P.V.	Markham	359	1,175	Strathroy	1,539	2,834
Courtright	64	355	Merlin	112	P.V.	Streetsville	224	701
Dashwood	119	P.V.	Merritton	11,109	2,916	Sutton	217	949
Delaware	68	P.V.	Milton	1,529	1,915	Swansea	3,379	7,100
Delhi	739	2,430	Milverton	512	994	Tavistock	664	1,080
Dorchester	133	P.V.	Mimico	2,959	8,785	Tecumseh	438	2,391
Drayton	144	528	Mitchell	757	1,670	Thamesford	225	P.V.
Dresden	479	1,525	Moorefield	53	P.V.	Thamesville	240	816
Drumbo	88	P.V.	Mount Brydges	104	P.V.	Thedford	119	598
Dublin	47	P.V.	Newbury	33	288	Thorndale	70	P.V.
Dundas	3,385	5,245	New Hamburg	621	1,441	Thorold	3,459	5,284
Dunnville	1,519	3,916	Newmarket	1,861	3,800	Tilbury	1,599	1,923
Dutton	261	830	New Toronto	12,555	9,469	Tillsonburg	1,614	4,602
East York Twp.	10,320	41,578	Niagara Falls	11,018	20,371	Toronto	387,546	657,612
Elmira	1,302	2,069	Niagara-on-the-Lake	821	1,764	Toronto Twp.	3,362	V.A.
Elora	501	1,185	North York Twp.	11,972	V.A.	Wallaceburg	4,848	4,802
Embro	105	420	Norwich	426	1,301	Wardsville	44	221
Erieau	102	218	Oil Springs	187	541	Waterdown	235	867
			Otterville	108	P.V.	Waterford	502	1,294
						Waterloo	6,542	8,968
						Watford	383	1,023

MUNICIPAL LOADS, JANUARY, 1945

	H.P.	Popula- tion		H.P.	Popula- tion		H.P.	Popula- tion
Welland	13,135	14,899	Neustadt	48	431	Kemptville	339	1,230
Wellesley	112	P.V.	Orangeville	686	2,558	Kingston	16,738	29,545
West Lorne	234	768	Owen Sound	6,418	13,559	Lakefield	430	1,301
Weston	5,769	1,234	Paisley	151	530	Lanark	102	686
Wheatley	216	761	Penetanguishene	1,071	4,177	Lancaster	60	570
Windsor	57,196	118,040	Port Carling	121	520	Lindsay	3,873	8,345
Woodbridge	679	1,100	Port Elgin	428	1,415	Madoc	220	1,130
Woodstock	9,373	12,339	Port McNicoll	97	950	Marmora	158	1,004
Wyoming	89	538	Port Perry	283	1,175	Martintown	41	P.V.
York Twp.	21,870	77,175	Priceville	10	P.V.	Maxville	120	811
Zurich	106	P.V.	Ripley	104	420	Millbrook	105	749
(66 2/3-Cycle)			Rosseau	23	305	Morrisburg	350	1,484
Bronte	152	P.V.	Shelburne	268	1,053	Napanee	1,341	3,241
Oakville	1,741	3,369	Southampton	588	1,467	Newcastle	193	701
Trafalgar Twp.	635	V.A.	Stayner	263	1,106	Norwood	175	710
GEORGIAN BAY DIVISION			Sunderland	83	P.V.	Omeme	217	630
(60-Cycle)			Tara	112	510	Orono	95	P.V.
Alliston	408	1,700	Teeswater	164	973	Oshawa	18,790	26,610
Arthur	174	1,089	Thornton	27	P.V.	Ottawa	40,224	150,816
Bala	124	355	Tottenham	106	532	Perth	1,801	4,187
Barrie	4,109	9,599	Uxbridge	290	1,480	Peterborough	15,415	24,977
Beaverton	218	941	Victoria Harbour	72	979	Picton	1,236	3,400
Beeton	95	617	Walkerton	1,015	2,534	Port Hope	2,894	4,997
Bradford	185	1,041	Waubushene	86	P.V.	Prescott	1,500	3,318
Brechin	48	P.V.	Warton	343	1,750	Renfrew	187	5,673
Cannington	174	761	Windermere	28	117	Richmond	75	428
Chatsworth	78	333	Wingham	801	2,149	Russell	78	P.V.
Chesley	590	1,812	Woodville	78	439	Smiths Falls	3,028	7,741
Coldwater	206	545	EASTERN ONTARIO DIVISION			Stirling	305	947
Collingwood	2,988	6,249	(60-Cycle)			Trenton	5,112	8,183
Cookstown	89	P.V.	Alexandria	232	1,976	Tweed	301	1,181
Creemore	136	661	Apple Hill	44	P.V.	Warkworth	77	P.V.
Dundalk	217	686	Arnprior	1,269	4,019	Wellington	251	948
Durham	380	1,874	Athens	103	626	Westport	114	725
Elmvale	177	P.V.	Bath	46	325	Whitby	1,437	4,236
Elmwood	66	P.V.	Belleville	8,126	15,498	Williamsburg	90	P.V.
Flesherton	67	452	Bloomfield	109	636	Winchester	340	1,017
Grand Valley	117	645	Bowmanville	3,314	3,850	THUNDER BAY SYSTEM		
Gravenhurst	1,362	2,261	Brighton	455	1,462	(60-Cycle)		
Hanover	1,400	3,190	Brockville	4,991	11,112	Port William	18,653	30,370
Holstein	28	P.V.	Cardinal	266	1,602	Nipigon Twp.	251	V.A.
Huntsville	1,269	2,943	Carleton Place	1,884	4,143	Port Arthur	23,886	24,217
Kincardine	776	2,483	Chesterville	292	1,094	NORTHERN ONTARIO		
Kirkfield	28	P.V.	Cobden	141	643	PROPERTIES		
Lucknow	362	856	Cobourg	2,218	5,907	Nipissing District		
MacTier	134	V.A.	Colborne	275	960	(60-Cycle)		
Markdale	193	776	Deseronto	232	1,002	North Bay	4,980	16,013
Meaford	821	2,759	Finch	90	396	Patricia District		
Midland	4,044	6,754	Frankford	168	1,095	(60-Cycle)		
Mildmay	134	764	Hastings	157	823	Sioux Lookout	334	1,967
Mount Forest	529	1,936	Havelock	177	1,103	Sudbury District		
			Iroquois	271	1,123	(60-Cycle)		
						Capreol	286	1,660
						Sudbury	10,127	36,724

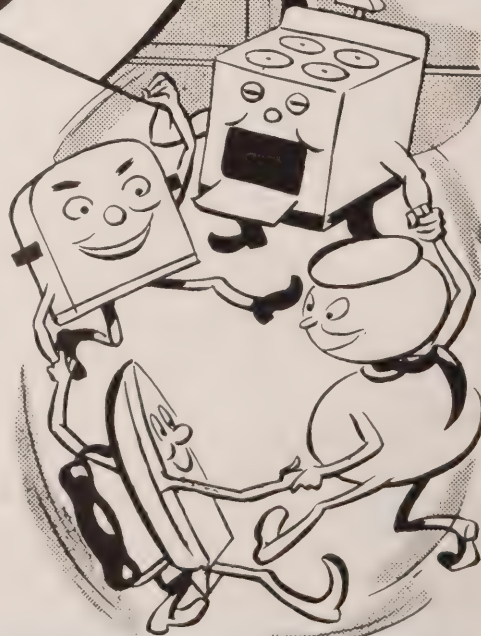
ELECTRIC APPLIANCES...
Hard to Get
BUT EASY TO CARE FOR



• Your electric refrigerator, range, iron, toaster, coffee maker and all other electric appliances are time and money savers . . . today they are more valuable than ever. The likelihood of early replacement is slim indeed . . . as long as materials are needed for war purposes. Make your refrigerator last—close refrigerator doors as quickly as possible, defrost regularly, and only use it for perishable goods.

Just a few minutes extra care . . . just a little extra thoughtfulness and they will continue to give you longer efficient service.

If repairs are needed see your local electrician.



THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO



HYDRO! News



TO NEW HORIZONS

AS THE WAR CLOUDS LIFT...

IT'S TIME TO BE GLAD *Wisely*

Germany has collapsed. It is as if we had been in a tug-of-war, with life itself as the prize. Now suddenly, the line seems loose in our hands. We must brace ourselves lest the pent up force of our own power send us plunging backward into disorder.

Joy is natural to us at this time; but let us be glad wisely. Much remains to be done. Much sacrifice must yet be endured if we are to establish on this world that peace and order which is, and has been, our real goal.

Thankful we should be. Proud we may well be of the courageous fidelity of our fighting men and the women who have backed them up; and of the proven quality of our technical minds and industrial workers.

Let us face the future with confident determination that Canada's new war-developed abilities shall be applied to assure better living for all our people. As Hydro has expanded to power the mighty war industries of Ontario, so in building for peace your Hydro stands ready to do its full part in providing a dependable low-cost electrical service to homes, industries and farms.



THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO



THE HYDRO - ELECTRIC POWER COMMISSION OF ONTARIO

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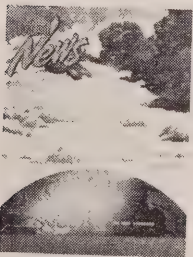
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The Front Cover



THIS month, Hydro News reflects the glorious transition which has taken place in the war picture with Europe emerging from grim darkness of battle into the sunlight of peace. Entitled "To New Horizons," this cover also suggests the tremendous task which still lies ahead in the Pacific, and heralds the day when the clouds of war will no longer cast their ghastly shadows over the earth.

Volume 32

May, 1945

Number 5

CONTENTS

	Page
Before Niagara Was Harnessed - - -	2
Page Three - - - - -	3
Light On Lighting - - - - -	4
Limestone City - - - - -	8
Harnessing Horsepower - - - - -	11
E.E.A. Sets Fine Record - - - - -	14
Aid War Effort - - - - -	15
Street Lighting For Tomorrow - - - - -	16
Hydro Horticultural Club Meeting - - - - -	19
Around The Hydro Circuit - - - - -	23
Hydro Home Forum - - - - -	24
Blossom Time - - - - -	25
Lighter Lines - - - - -	26
Downwards Puzzle - - - - -	27
Monthly Load Summary - - - - -	27
Municipal Loads - - - - -	28





Before Niagara Was Harnessed

NIAGARA FALLS, in 1853, as depicted in this old print, had quite a different setting to the Niagara Falls of today.

There were no power houses—only a few scattered mills with water-driven wheels almost hidden from view by the forests which clad both banks of the river. There was, however, quite a tourist activity, especially in the summer time, and both inns and curio shops plied a lucrative trade on both sides of the border.

Niagara has always been regarded by travellers as one of Nature's most sublime spectacles. From the early decades of the last century up to the present time few globe-trotters have regarded their itineraries as complete without a visit to the famous cataract.

For the traveller of by-gone days hazardous adventure was often mingled with sight-seeing. Safety and protection devices were few and unreliable. Rapids had to be crossed on rickety planks to reach Goat Island, and access to the observation tower on Terrapin Rock, shown in this picture, was gained over a bridge which was not

without its dangers. Both tower and bridge, it might be said, were built over a hundred years ago. They no longer exist. The tower went long ago. The old bridge was replaced by a steel structure in 1901, but this, too, has since been removed in the interests of safety.

The thunderous roar of Niagara has called many men to death as well as to brilliant Hydro achievements. In the middle Victorian era tight-rope walking over the Whirlpool Rapids was one of the spectacular but foolhardy feats which drew vast crowds to both sides of the river. And today, from time to time, men still risk their lives going over the Falls in a barrel.

Hydro News is indebted to E. Tugwell of the Chatham Hydro for the loan of this interesting print of the Niagara of long ago. Until her recent demise, it was in the possession of Miss Lucy Sandys of 145 Stanley Avenue, Chatham. The picture is from a drawing made on the spot by W. Young for the subscribers of the New York Albion.

ONWARD—TO THE END OF THE ROAD

THIS month will be chronicled as one of the most historic and significant in the destinies of all people who, by their deeds, have shown that they are willing to fight and, if necessary, die for the preservation of liberty.

With dramatic swiftness one event has succeeded another in the fast-moving panorama of war and, after five long years, Europe has been freed from the bestial bonds of Nazi tyranny and terrorism.

As the grim cannonade of battle dies over her smouldering, twisted ruins and blood-drenched lands, the voices of liberated peoples join in a great paean of thanksgiving.

It is fitting that there should be rejoicing over the victory in Europe, but there should also be solemn contemplation and re-dedication to the great tasks which still lie ahead for the full force of Allied arms must now be brought to bear upon the ruthless enemy in the Pacific. Only after this foul and infamous aggressor has been crushed as decisively as the Nazi monster can there be a complete transition to the ways and pursuits of peace. The order of the hour is, therefore, onward to the end of the road.

—V—

Canadians at home have never been subjected to the terror and horror of the Nazi blitz or V-bomb barrages as were the people of Britain, who manned the ramparts of freedom alone for nearly a year. They have, however, made a magnificent contribution to victory by producing the materials and equipment of war. Indeed, the war output of this Dominion, on a per capita basis, has been approached by that of few countries. In the Province of Ontario, whose total production is estimated at over forty per cent of the output of the whole of Canada, Hydro has been the vital driving force behind the humming network of war and other industries.

Hundreds of Hydro employees are included among the great army of Canada's sons and daughters who rallied to the colours and who have, by their courageous deeds and devotion to duty, brought high honour to their native land.

In giving thanks for victory it is also fitting to remember the price which has been paid.

The hymn of thanksgiving, therefore, is also a solemn requiem to all the heroic men, women and children of all the Allied nations who died that freedom might live. Many of these were Canadians whose fathers died in the last Great War. The deeds of that last generation are immortalized by the magnificent Canadian memorial which still stands guard for Canada at Vimy. Poppies, too, in Flanders, still rear their crimson heads to the glory of the remembering sunset.

In Europe today there are millions of wounds to heal, and millions of shattered lives to be restored. Thousands of little homes of little people are now pitiful heaps of rubble which stand as symbols of the handiwork of the "beast of Berchtesgaden" and his goose-stepping "supermen."

—V—

The full story of the Nazi way of life—and death—is now being unfolded as the Allies penetrate the dark heart of Germany. The revelations have staggered, shocked and sickened even the toughest of battle-seasoned troops. The evidence found at the Buchenwald, Belsen, Erla, Nordhausen and other Nazi horror camps is the work of inhuman monsters and not of men.

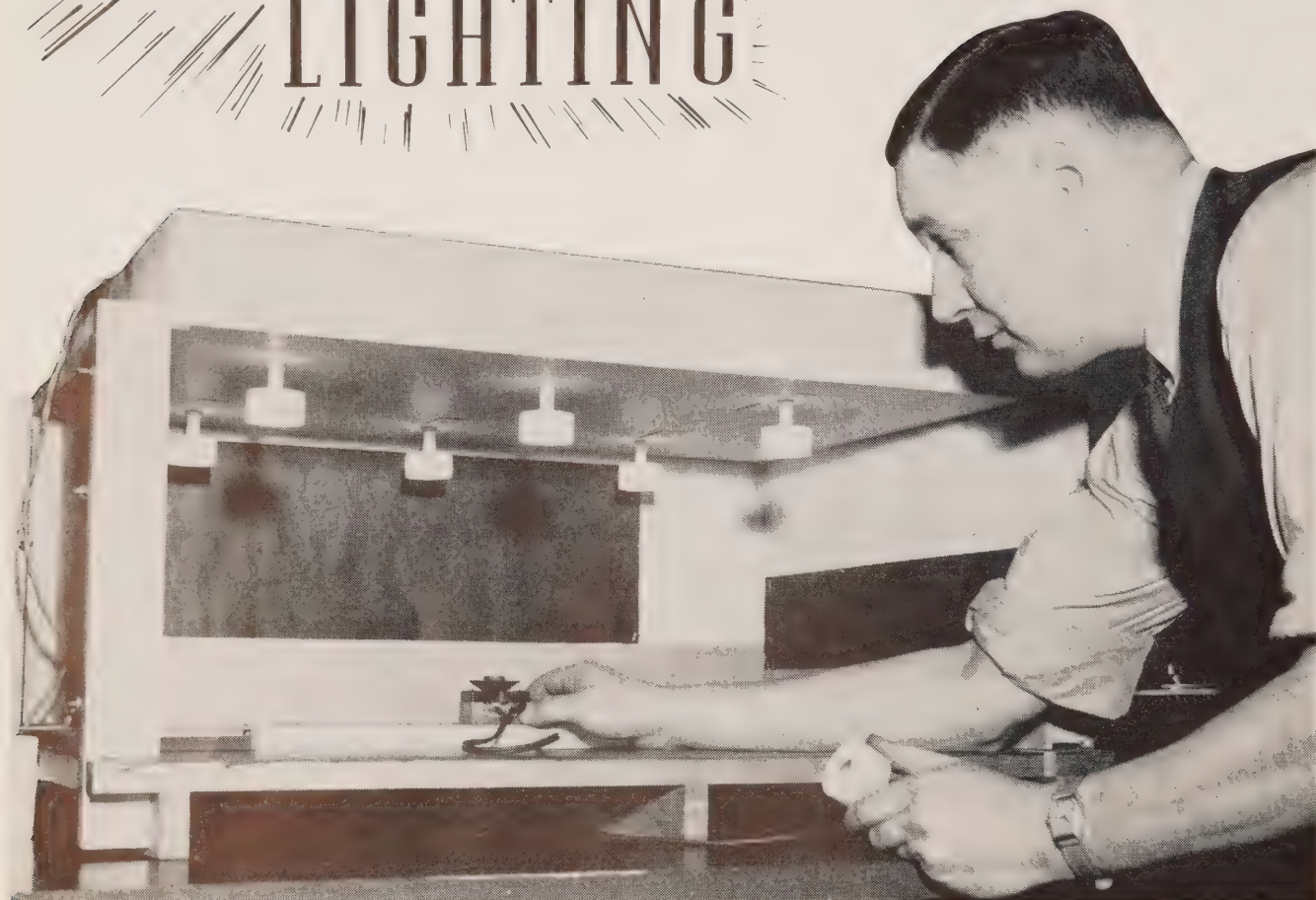
These facts must be remembered as the representatives of the United Nations set their minds and hands to the task of writing a new world Bill of Rights to assure the liberty, security and happiness of all peoples in all nations, great and small. By remembering these facts, free people will be united in their desire to enforce, and live up to, the provisions of that Bill.

Canada, in common with her partners in the British Commonwealth of Nations and all her Allies, will go forward determined to play her full part in building a world in which right, and not might, will be the yardstick in national and international relations, and in which the brotherhood of man will become a reality.

Onward, then, to the end of the road.

LIGHT ON LIGHTING

IN THIS table-top classroom in the Hydro laboratory, lighting experiments are conducted to study the distribution of light under different conditions. Hedley Davidson is the technician.



IN an inconspicuous corner of the Hydro laboratory on Strachan Avenue sits an oblong wooden box, about the size and shape of the treasure chests the story book pirates used to bury.

As a matter of fact, this box is a treasure chest. Or, perhaps, one might call it a magic box for out of it will come clear, strong pairs of eyes for every boy and girl in Ontario.

Unlike the box of Pandora, the magic doesn't come about by the mere lifting of the lid; it isn't as easy as that! It's going to come by slow, painstaking work and careful planning.

This particular box is a miniature model classroom, fitted up for experiments in lighting. It is built to the scale of a typical classroom and, in the best tradition of dolls' houses, it is fitted out to look like its counterpart, with carefully painted ceiling, walls and floor, and it has blackboards across one end and down one side.

In the ceiling are six miniature electric fixtures that give, in proportion, the radiance of full-size lights. The

immediate problem which this box is tackling is to find out the exact amount of light that reaches each desk in the room from the ceiling lights. This is done by means of a little gadget technically known as a compensated photo cell which is built to equivalent desk height and can be moved to various parts of the room and the light measurements taken. And so it can be calculated where the lighting fixtures in a room should be, how many there should be and how the light can best be distributed evenly to each desk.

In case you are unimpressed with the importance of the matter, perhaps you can look back at your own school days to some unlucky year when the teacher chose to put you in the back seat in the row of desks farthest from the windows and you spent the next ten months squinting hopelessly at the blackboard and on dark days almost as hopelessly at the book right under your nose. If you've never had that experience, you're lucky!

At any rate, the reports of educationalists and scientists are quite convincing. It has been estimated that eighty-five percent of all the knowledge one acquires comes through

the sense of sight. In other words if a child can't see it can't learn. And, too often, in the past, the dull child has been the child who couldn't see.

Under Ontario's progressive educational system, the little red school house is not what it used to be. Classrooms are being made more attractive with bright colours, pictures and books; the programme of studies is both practical and interesting and more emphasis is, quite rightly, being placed upon the physical and mental health of the child. At the same time, there is increasing recognition of the fact that learning is seeing and that what was good enough twenty years ago is not good enough for today.

Need for Artificial Light

While a classroom has windows, most such rooms have not enough light for all the children. When Man first moved in from the jungle, he built himself a shelter designed to keep himself warm but designed also to shut out most of the daylight. Then he put his eyes to work and through the centuries has thought up more and more in-

genious ways of straining and overworking them. Electricity has helped enormously but, according to scientists, people still haven't as much light as they need considering the constant demands made upon the eyes. The windows of most of the older schools are small. The daylight that does get in is a mixed blessing, for it shines in the eyes of some of the children and makes the blackboard look white and shiny. And even when the windows are a fair size, the children sitting farthest from the windows infrequently have enough light. To be more specific: authorities stress the fact that any illumination is gauged by what is known as foot-candles. A foot-candle is the illumination provided by a standard candle on a surface placed one foot from it. Foot-candles can be measured with great accuracy by small light meters. It is agreed that a minimum of fifteen foot-candles is necessary for normal sight in ordinary classrooms. (It might be said here that for subnormal sight or for any fine work higher foot-candles are needed).

Now let's have a look at a classroom. Mary is the little girl sitting in the favoured front seat by the windows. John

A SPECIAL sight-saving class in the Hester Howe school, Toronto, is shown here. This class is for children whose eyesight is below normal. The intensity of illumination is higher than in the ordinary classroom, and the desks are arranged so that the tops can be tilted or the whole desk moved to get the best light on the work books.





MAXIMUM DAYLIGHT, supplemented by strong electric light for dark days, helps these boys and girls with poor eyesight to protect the precious sight they still have and prevents further strain. It is another sight-saving class at the Hester Howe school.

is in a front seat, too, but the one farthest from the windows. It is a clear sunny day. Mary is getting something over one hundred foot-candles. John is getting only one ninth of that which brings him down to around eleven foot-candles or less and means that he is in a permanent semi-twilight. Now it is a leaden-skied winter day. Mary is getting barely enough light to see her books and poor John is getting about one sixteenth of the light that Mary is getting which brings him down to anything from near zero to perhaps four or five foot-candles, and leaves him sitting in a virtual blackout.

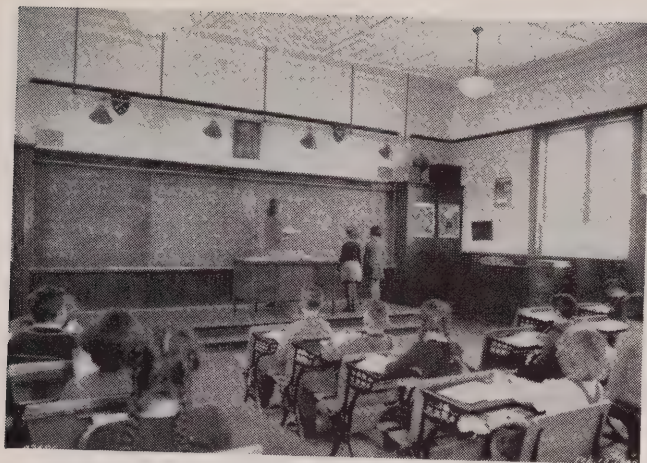
Records show that in Ontario more than half the days are cloudy during the school year. John's parents will be hurt and surprised when his report card comes home with poor marks and a note to the effect that John doesn't seem interested in his school work. Of course he's not interested in his work. He can't be interested in something he doesn't see and, as a result, doesn't understand. It is obvious, then, that some sort of artificial lighting is really needed in every classroom. And that is where the little box in the Hydro laboratory comes in. It can be used to determine how much light is needed in order to give both John and Mary enough illumination.

Other Classroom Problems

To return to John, he has an added worry on sunny days, when the light comes in and makes the blackboard so bright and shiny that he can't see what's written on it. His teacher may not appreciate his difficulty, and even if

she does, the only thing she can do is to pull down the blinds on the windows near the front of the room. This does away with part of the glare but plunges John into darkness again. Experimenters have discovered several things that help to overcome this trouble. The most important is that there should be special blackboard lights—small lights right over the board with their light directed at an angle that will assure maximum visibility and minimum glare. Tilting the blackboard out from the top is a good idea, also having blinds that start from the centre and roll either to the top or bottom so that glare coming from the bottom can be eliminated without shutting out the good seeing light from the top.

Experiments with the miniature classroom are showing another way that John can be helped to see what is going on about him, and that is by the right use of paint. Much work has been done recently in connection with the beneficial effect of colour in industrial plants. The same general rules apply to the school. Dark paint makes for gloom and glare and loss of light. Light paint, it has been found, not only makes the room more cheerful, it actually gives a far better diffusion of light, reduces glare and consequently reduces eye strain. The ceiling of the box classroom, for example, is painted a flat white which prevents glare and gives a light reflection of eighty-five percent. The rest of the room, it is recommended, should be painted in light, cheerful shades, while authorities contend that desk tops and other furniture should be painted light shades to reflect more light and make it easier on the eyes, because it reduces



"BRODDYTOWN" SCHOOL near Brampton is a typical country school with improved lighting. There are six adequate ceiling lights and also a row of small lights over the blackboard.

the contrast in brightness between white paper and its immediate background.

A few years ago, an elaborate experiment carried out in an elementary school in Missouri revealed that improved lighting definitely and significantly increased educational progress. Children who had worked for three years in good light showed a marked increase in learning capacity and general progress. The experimenters also pointed out that it actually paid a community in dollars and cents to have good school lighting because of the resulting drop in the number of "repeaters."

Hydro Serves the Schools

In Ontario, there is evidence of an increasing appreciation of the importance of good illumination. The interiors of modern factories and office buildings reflect this trend, while many progressive school boards are giving close study to the lighting of schools.

As another service to the men, women and children of the province, Hydro, working in co-operation with the Department of Education, stands ready to provide expert advice to any school board.

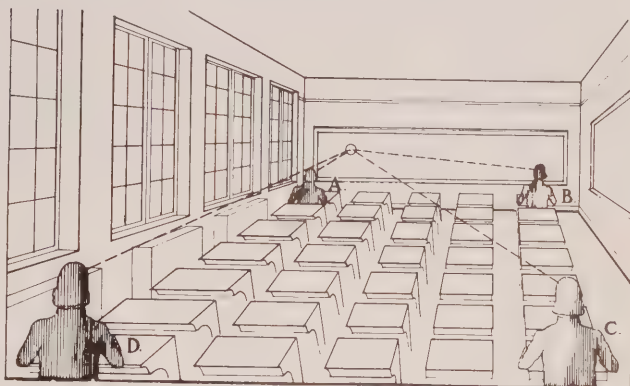
In discussing this service, George Cousins, head of the Commission's Lighting Service Section, pointed out that apart from the laboratory where the experimental work is done, Hydro has lighting experts in the head office. Until recently there was a staff of field men who personally visited the schools to give advice on lighting. Although this service had to be stopped because of wartime conditions, school boards can obtain from the Commission forms on which can be recorded detailed measurements and descriptions of the particular school and its problems. From that information Hydro can make a complete recommendation for re-lighting the school up to standard requirements. The report contains information about wiring, lighting fixtures, window blinds, painting and so on. Last year alone, Mr. Cousins stated, Hydro sent out over four hundred requested plans and in almost every case the advice was acted upon.

Even the present minimum lighting requirement is not very high and lighting experts are in the process of raising it. In a classroom where the eyes of the children are below

normal or in a special class where fine manual work is being done, at least fifty foot-candles are needed.

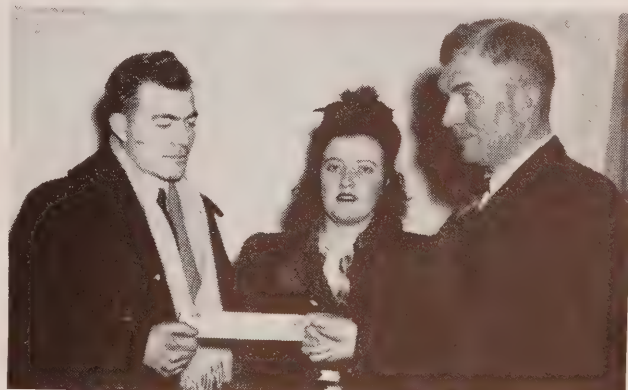
Already, Mr. Cousins pointed out, the lighting industry in Ontario has adopted a minimum of twenty foot-candles for ordinary classrooms and this will, in all probability, be adopted by the Department of Education. He contended that one of the most direct ways of improving the general standard in this province is in the work that Hydro was doing. "That work," he said, "involves experimenting, taking the results of the experiments and turning them into sound and practical advice, and in turn offering that advice to the provincial schools."

This work is an assurance that John of the future will have as good a chance to see as anyone else and will reach manhood with eyes undamaged by years of concentrated work in inadequate light.

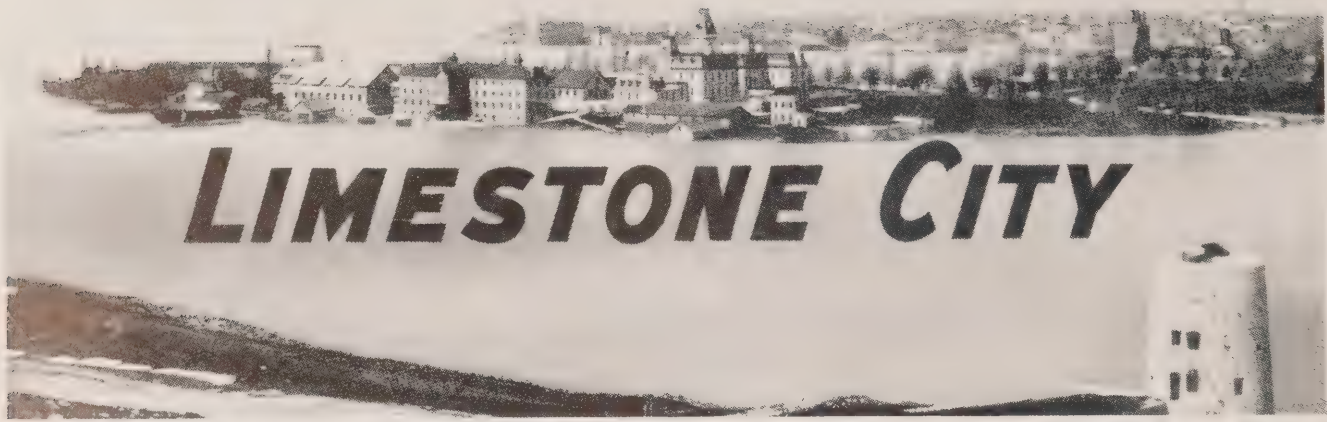


RELATIVE VISIBILITY from the four corners of a classroom is shown in this diagram. The visibility from A to the point O on the blackboard is given as 100. At B it is from zero to 35 and at C it is 50 or exactly half of A.

PROMPT ACTION REWARDED



PPROMPT action by Mr. and Mrs. Edmond J. Sequin of Sarnia (shown above) in reporting a Hydro pole fire, probably prevented disruption of service and considerable damage to public property. John T. Barnes, on the right, chairman of the Sarnia Hydro-Electric Commission, can be seen presenting the young couple with a cash award. The fire was attributed to a short circuit caused by sleet forming over the insulators.



ROYAL MILITARY College and city of Kingston, viewed from historic Fort Henry.

KINGSTON, centre of a famous university and military college, was originally a fur trading post which was established by Count Frontenac in July, 1673.

The Limestone City was at one time the capital of United Canada and is now the location of many important industries that are served by Hydro which has progressed rapidly since the creation of the local Commission in 1914.

“Katarakoui” (the present site of the city) was where Frontenac decided to erect a well-defended “fur depot”. He led a long line of canoes and bateaux up the St. Lawrence River and through the “Thousand Islands” to the point where the Cataraqui river flows out to join the

St. Lawrence. The primitive stockaded fort of logs was built in four days and appropriately called Fort Frontenac. For many years thereafter, the Fort was a leading centre of French military and naval activity in the New World until its garrison fell before British forces in 1758.

Strategic Base

The first permanent British settlement of Kingston took place at the close of the American War of Independence when a party of United Empire Loyalists left their American homes and made their way across the border. In 1788, about five years after the first Loyalist refugees had arrived, Kingston was selected by the British as a strategic base for naval and military operations. When the War of



IMPRESSIVE CITY buildings, Kingston, typical of the striking limestone architecture found throughout this Ontario city.



OLD WOODEN dwelling where the first legislative council of United Canada, summoned by Lord Sydenham, met in 1841.



MAIN HYDRO substation (left) of the Kingston public utilities commission, adjacent to Hydro head office on Queen Street.

SECTION OF the public utilities commission office, where a large volume of billing and accounting routine is handled daily.



1812 reduced the military importance of York (Toronto) and Niagara, the population and importance of Kingston doubled. At this time the construction of famous Fort Henry was undertaken, and when the stronghold was completed 20 years later it replaced the old and inadequate log fortifications.

The city continued as a garrison station until 1872 when the Canadian Rifles, of which it was the headquarters, were disbanded. Kingston's strong military tradition, extending over many years of both French and British domination, made it the most desirable site for establishment of the Royal Military College in 1876. R.M.C. graduates have served with distinction on the battlefields of the world and the story of their exploits in the South African War, the Great War of 1914-18 and the present struggle is a stirring one.

Kingston was incorporated as a city in 1838 and its

stature increased rapidly. The parliament of United Canada was summoned by Lord Sydenham to meet in the city in 1841, and from then until 1844 Kingston was the national capital. The city's reputation as a cultural and academic centre was further enhanced when Queen's University, one of the great seats of learning in the Dominion, was founded in 1841 under a royal charter from Queen Victoria, then a young girl newly ascended to the British throne. Kingston was also the birthplace of some of the most outstanding figures in Canadian public life, among them being Sir Oliver Mowat and Sir George Kirkpatrick, former lieutenant-governors of Ontario; and Sir Richard Cartwright, Federal cabinet minister for many years. Sir John A. Macdonald, one of the "Fathers of Confederation" and Prime Minister of the Dominion for 19 years, spent his youth in Kingston and vicinity.

Kingston's magnificent limestone buildings, fine examples



VIEW OF the Kingston Hydro's No. 2 substation, with residence nearby. This modern station serves consumers in the west end of the city.



IN KINGSTON, which is known as "The Limestone City," the visitor discovers many beauty spots and places of historic interest. This illustration shows the monument to the late Sir John A. Macdonald and the entrance to the City Park.



QUEEN'S UNIVERSITY is one of Canada's famous seats of learning. It was established in 1841 under a royal charter from Queen Victoria. Among the well-known buildings of this historic university is the observatory, shown above.

of classic architecture, lend an old-world atmosphere to the city and account for its popular reputation as "the limestone city". The visitor to Kingston is intrigued by the blending of old and new, of modern business and industry thriving against a stately background of history. Numerous churches and cathedrals, spacious parks, military and general hospitals, imposing public buildings and schools stamp Kingston as a progressive municipality of 33,500 population which has enriched the national interest by its steady growth and influence in time of peace and war. The city is favoured with a splendid harbour, and the multitude of river steamers and lake boats constantly plying the waterfront signify its importance as the most easterly shipping point of the Great Lakes and the southern terminus of the Rideau Canal running from Kingston to Ottawa. It is interesting to note that the first Canadian river and lake steamboat was launched at Kingston in the year 1812.

As an industrial and manufacturing center, Kingston has been particularly busy in time of war. Shipbuilding, locomotive and engine production are among the city's heavy industries, while airplane parts, parachutes, ships and shells have been turned out at a fast pace. Among the leading industrial plants are the Aluminum Company of Canada, Limited; Canadian Industries Limited (Nylon Plant); the Kingston Shipbuilding Company; and the Canadian Locomotive Company.

Hydro In Kingston

In 1914, the city's electric power load totalled 750 horsepower; today it is close to 16,000 horsepower, with approximately 10 miles of 44,000-volt line transmitting power throughout the area served by the Kingston public utilities commission. At the end of 1943, the Hydro utility was serving 7,683 domestic consumers; 1,027 commercial users; and 163 industries.

The general offices and showroom of the Kingston public utilities commission are on Queen Street, with the main substation adjacent to the office building. A Hydro staff of 80 employees handles the large volume of work entailed in meeting the electrical needs of a city possessing such diversity of commerce and industry.

Members of the original Kingston commission were T. J. Rigney, chairman; J. M. Shaw, mayor; A. E. Ross, R. H. Toye and J. H. Birkett. The present commission consists of Thomas A. Andre, chairman; Mayor C. LeRoy Boyd; James Halliday, A. E. Stansbury and James Harris, commissioners; and C. C. Folger, general manager and secretary.

O.M.E.A. CONVENTION OFF

BECAUSE of unsettled conditions generally, the Ontario Municipal Electric Association's annual convention is definitely off until next year.

This decision was announced by W. Ross Strike, president of the O.M.E.A., following an executive meeting. In a communication to members, he stated this action had been taken after consideration of the circumstances involved.

The two elections this year, VE-Day, the return of service men and women from overseas and the congestion at hotels were among the factors which had influenced the O.M.E.A. executive in the decision to postpone the convention this year, Mr. Strike stated.

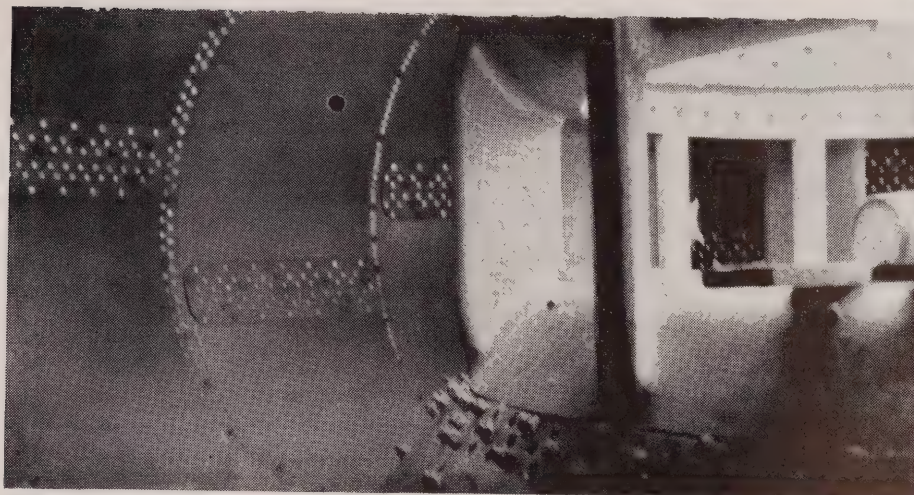
It had been made with a great deal of regret, he pointed out, for the importance of Hydro municipalities meeting together once a year to discuss their problems was fully realized.

"The O.M.E.A. executive," continued Mr. Strike, "have instructed me to assure you, however, that next year's convention will be bigger and better than ever before, and we hope we can make it a real Victory celebration and lay important plans for post-war development."

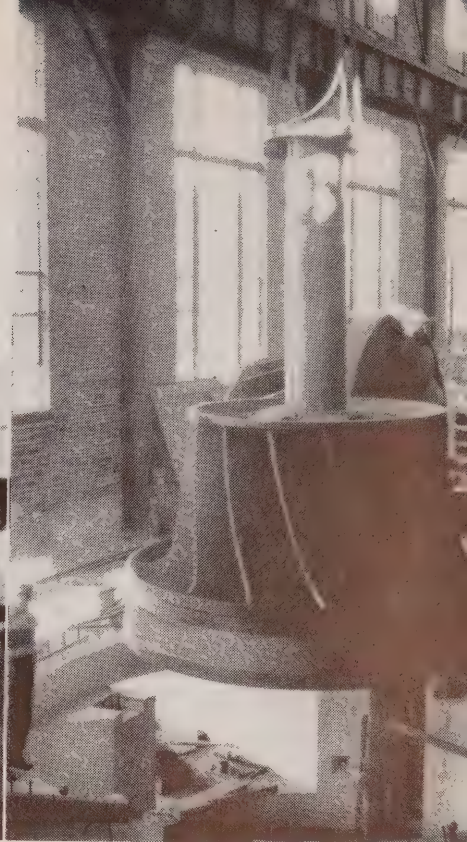
He did not think, however, there would be any difficulty about holding district meetings in the fall so that the work of the association would not suffer.

In the near future the executive of the Association of Municipal Electrical Utilities will meet to decide what action this group will take in connection with convention plans.

HARNESSING HORSEPOWER



LOOKING THROUGH the scroll case (above) into the speed ring of a turbine. The openings in the ring are guide vanes through which water will be led to the turbine runner.



THIS RUNNER or water-wheel of a turbine (right) is being lowered into the speed ring which has already been set in place at the bottom of the pit. The shaft of the runner will be joined to the shaft of the generator above.

THIS is the eighth in a series of articles which outline step-by-step, the work involved in the building of a power plant from the time a site is selected until the electricity is available in homes and factories that may be located hundreds of miles away.—The Editor.

CONSTRUCTION OF A DEVELOPMENT

By H. M. Hyland,
H.E.P.C. Construction Dept.

WHEN the hydraulic department of the H.E.P.C. has determined upon the general scheme for a new power development, and the location and design of the dam and power house and essential electrical structures have been definitely decided upon, it becomes the duty of the construction department to convert the plans into realities of steel and concrete.

In previous issues of Hydro News, the clearing of the development site and the lay-out and accommodations of the camp have been described in detail, and the various jobs upon which construction crews are engaged in more general terms. In this article, the building of the dam and power house and the installation of the hydraulic and generating equipment will be dealt with more particularly.

Following the construction schedule previously drawn up, the first job to be tackled is usually that of providing the foundations for the main dam and power house. If the sites are located in a river, as is generally the case, they

have to be dewatered, and the preliminary step before any excavation work can proceed, is the construction of a cofferdam and the pumping out of the protected enclosure, which must be kept dry until the concrete work is all well above the water level.

Cofferdams

There are many types of cofferdams. Most commonly used by The Hydro-Electric Power Commission of Ontario in its development projects is the rock-filled timber crib. The crib-work for this structure is built on land after soundings have been taken along the line of its proposed location so that any inequalities in the river bed can be accommodated by the cutting and scribing of the bottom timbers. The courses or layers of the cofferdam are laid alternately longitudinally and transversely and are spiked together with steel pins. When the sections have been launched, placed in position, and loaded, they form a continuous level barrier, which is rendered practically water-tight by facing the outer side with planks. As a final precaution against water forcing a passage beneath these protecting planks, they are reinforced with a toe of earth or clay. It is necessary to employ experienced divers in certain phases of the work.

In dam construction particularly, varied problems arise with regard to the placing of the protecting cofferdams. These are discussed in a previous article of this series appearing in the February issue of Hydro News.

Foundations on Bed Rock

The foundations of power plant structures must be on solid rock. To reach this may involve the removal of large



THIS VIEW of a power house under construction shows the completed base for the draft tube and the pier forms. Also shown are a stiff-legged derrick and the tail-race cofferdam.

quantities of over-burden in addition to the many yards of rock which have to be excavated and trimmed so that the foundations will be of the required shape and level.

Blasting Operations

After bed rock has been reached, drilling and blasting are resorted to. The blasting must be restricted in order to avoid shattering the rock faces which will adjoin the power house, which, if broken down, would entail the expense and trouble of additional excavating and concreting. For this reason, the blasting operations on a power house site differ considerably from those employed in quarrying operations of similar magnitude. Much more drilling is resorted to and smaller individual charges of dynamite are used.

The shape of the excavation for a power house may be quite intricate in order to provide recesses for the draft tubes and other features and to avoid exceeding the amount of concrete which the design calls for.

The Main Dam

Dams are built to provide a head or reservoir of water for the turbines. A dam may be of concrete, earth-fill or timber-crib construction, according to the character of the development and local conditions. Whatever the material used in construction, it must be structurally designed to satisfy the requirements of stability against water pressure, ice-thrust, and up-lift at base. And it must be able to pass the maximum flood flow with safety.

In some instances the dam may be built as an extension to the power house. Frequently its function requires it to be located at some little distance. There are developments where canals several miles in length are required to convey the water from the intake to the power house.

Reinforced Concrete Construction

Sometimes the head works which control the water passages leading to the turbines are included in the dam structure. The construction here is usually of reinforced concrete, and steel racks are provided to prevent undesirable debris from entering the turbines.

Dams are furnished with either spill-way sections or sluice ways, or both, to provide for abnormal river flow. The sluice ways are equipped with gates so that the head of water dammed up for power purposes can always be

controlled. Under flood conditions more of these gates are opened for the quicker discharge of freshet water piling up behind the dam.

Substructure of Power House

The substructure of the power house, which will house the turbines, is invariably built of heavily reinforced concrete. The concrete is usually prepared in a mixer plant set up on the job so that it can be conveniently transferred to the forms. All material used in the concrete must first pass exacting tests at the Commission's laboratories, where the varying amounts of stone, sand and cement which must be mixed to produce the required strength are calculated.

One of the reasons for the heavy reinforcement of the power house structure is that it is honeycombed with chambers and passages. There are channels to lead the water to and from the turbines, and there are openings and rooms for the installation of such equipment as pumps, compressors and oil storage tanks.

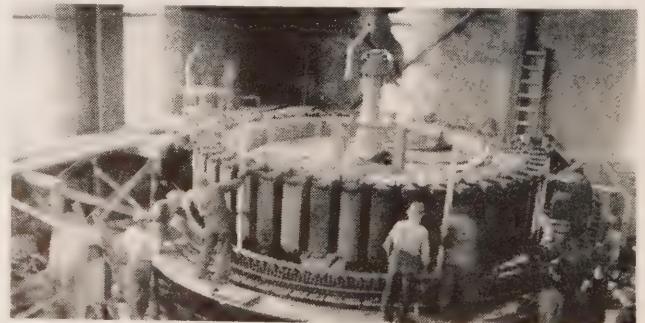
Building of the Draft Tube

Working from the rock foundations upward, the first job to claim attention is the building of the draft tube. This is the passage in which the discharged water from the turbine is conveyed to the tail-race. As modern turbines usually have a vertical set-up, the water passed through them is released in that direction, and the draft tubes are usually elbow-shaped so that the discharge to the tail-race may be effected horizontally.

The draft tube is at the very bottom of the substructure. It carries, as it were, the full weight of the power house structure above it. On this account, the concrete forming its piers, walls and roof must be strongly reinforced with steel bars. The upper part of the draft tube is lined with steel.

The Speed Ring

One of the most important parts of the turbine equipment is the speed ring. This is a heavy cast steel structure, provided with large openings, which sits immediately above the draft tube liner. Through its openings water is deflected by fixed guide vanes to moveable guides to impinge on the runner or water wheel of the turbine. This speed ring must be very accurately placed and aligned, for upon



SOME OF the rotors for the giant generators in large power plants weigh as much as seventy tons. They are lowered into position by powerful travelling cranes.

its correct setting will depend the proper functioning of the hydraulic machinery. When it has been levelled correctly, it is held rigidly in place by the concreting of the draft tube liner to which it is bolted.

Joined to the top of the speed ring is the pit liner. Attached to this is the mechanism which actuates the moveable guides. These admit varying quantities of water to the runner of the turbine as called for by the sensitive governors as these respond to the fluctuating loads which the generators must meet.

The Scroll Case

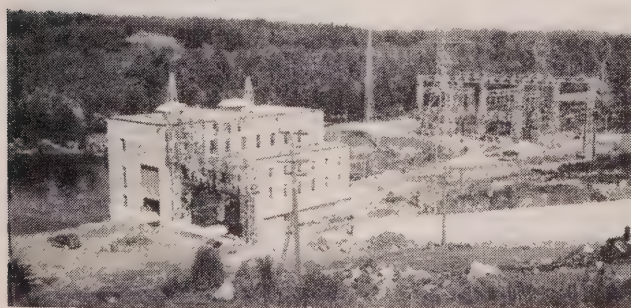
A scroll case looks like the shell of a gigantic snail. Its function is to lead the water to the speed ring openings. One type of scroll case is a heavily reinforced concrete structure, and this type is generally used where the head of water is comparatively low. Another type, designed for high heads is made of plate steel, and is enclosed within the concrete substructure.

Set in the concrete substructure are also various drainage and water-supply pipes and conduits for lighting and control cables. And just above the scroll case are passages for bringing air from the outside to cool the generator.

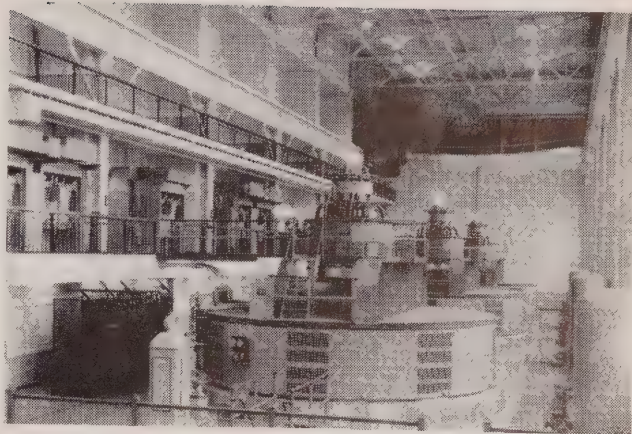
As the shapes of the draft tube and the concrete scroll case are often involved and complicated, the forms required for them have to be constructed from special, closely detailed drawings. They are generally built at the carpenter shop and brought down to the power house in sections ready to be set up.

A Multiplicity of Jobs

The jobs involved in the building of the substructure of a power house are many and varied. Outside of excavation and cofferdam construction, many crews are employed. Carpenter gangs are busy fashioning the forms into which the concrete is poured. There is the concrete crew, itself. There are riggers to move the heavy parts of the turbine equipment, pipe-fitters to look after the piping for drainage and water supply, electricians to install conduit and power ducts, erectors to place the turbine machinery in position, gangs for the steel reinforcing jobs, drillers to



THIS POWER plant has been completed and is already in operation. In the foreground are penstocks carrying water to the turbines. Near the power house is a transformer, and farther off the switching station.



INTERIOR OF a power house showing three generating units. At the left is the relay switch board and above it the gallery containing the metal-clad switchgear. The travelling crane is shown in the background.

pierce holes for anchoring forms and to chip rock and concrete. And then there are the superintendent and his staff of foremen who must co-ordinate all the operations so that they may progress steadily and in the proper sequence.

The Superstructure

The superstructure of a power house has two main divisions. There is the generator room, and there is that part of the building up-stream from the generator room where all the electrical equipment is located. Included in the generator room is usually an erection bay where the parts of the turbines and generators are assembled before being put into position and where they may be placed later for repair.

Superstructures are built with rivetted steel frames and with walls of concrete, brick, tile or stone. In the generator room the steel frame supports a travelling crane which operates at a convenient height above the floor to handle all turbine and generator parts as they are assembled and installed. Some cranes have a lifting capacity in the neighborhood of 250 tons. They glide smoothly along on their wide-spanned tracks under the roof of the power house, while their great steel cable tentacles reach down here and there to pick up perhaps a heavy turbine runner or a 70-ton rotor and carry it with apparent ease to where it is required.

The control equipment may be housed on floors at different elevations. Such stagings accommodate the oil circuit breakers on the main supply line from the generators, the control room, itself, whence the operation of the power house is directed, the battery room, the air-conditioning plant, the storehouse, and other service equipment.

Building Superstructure

Setting up, aligning and rivetting the structural steel frame is the first operation in the construction of the superstructure. The setting up of the steel is accomplished by

(Continued on page 22)

E.E.A. SETS FINE RECORD IN ACCIDENT PREVENTION

**Hydro Utilities Co-operating Closely In Association's Work — Annual Report Issued
And New Officers Elected**

A NOTABLE record in accident prevention, resulting in the saving of many lives, is set forth in the 30th annual report of the Electrical Employers' Association of Ontario. Through the activities of the association during its 30 years of existence, fatal accidents to utility employees have been reduced in number to one-third of what they were in 1915, while new practices and devices introduced by the E.E.A. have contributed materially to safer working conditions and operating efficiency.

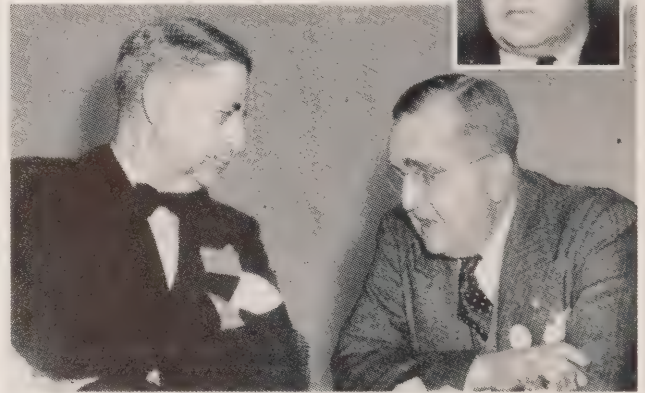
The association was organized on December 17, 1914, and began operation on January 1, 1915, for the purpose of assisting public utilities in accident prevention and representing them before the Workmen's Compensation Board. As its first task, the E.E.A. began spreading the basic principle on which it was founded, namely that it was possible to carry out the operations of an electrical public utility without accidents to employees. The association's work and influence have increased so rapidly that at the present time some 80 meetings are held each year in various parts of the province. H.E.P.C. utilities throughout the province have co-operated closely in this work, making widespread use of practices and devices recommended by the association in the interest of safety and service efficiency.

Electrical shock, the major hazard to utility employees, has received foremost attention from the E.E.A. down through the years. Study, research and investigations were carried out and thorough training given in artificial respiration and other remedial measures. Design of power houses, substations and overhead lines received early consideration. Clear marking of circuits in power houses and substations, and emergency exits as part of efficient design, were first developed by the association. Early investigations also contributed to the protection incorporated in the present-day hydraulic governor. Another feature introduced by the E.E.A. is the clean wood-pole top, with ample working space, which is in general use today.

A major improvement in design of the lineman's belt is also cited in the report. In the early days these belts were responsible for many serious accidents. An improved type of belt was developed using drop-forged D's and snaps, and since it was introduced not one accident in Ontario has occurred as the result of failure of a lineman's belt.

The activities of the E.E.A. have resulted in substantial savings to public utilities. While benefits to injured workmen have been increased under the Workmen's Compensation Act and the individual accident costs more, the costs of accidents to the utilities have been lowered from year to year. The association maintains close contact with acci-

BIG THREE of the Electrical Employers' Association, shown here, are: J. W. Peart (inset), St. Thomas, president; P. B. Yates (left), St. Catharines, vice-president; and Wills Maclachlan, Toronto, secretary-treasurer and engineer.



dent prevention bodies, in an effort to keep abreast of latest developments in this field.

In addition to the marked reduction in the number of fatal accidents, permanent partial disability cases have been reduced to fifteen per cent of the former figure. "As a result of the operations of the association," the report states, "many lives have been saved and much suffering prevented, resulting in tremendous benefits to employees and their families, and to the service given to the public."

Officers of the managing committee of the Electrical Employers' Association of Ontario for the year 1945 are: president, J. W. Peart, Public Utilities Commission, St. Thomas, Ontario; vice-president, P. B. Yates, Public Utilities Commission, St. Catharines, Ontario; secretary-treasurer and engineer, Wills Maclachlan, Toronto, Ontario.

Managing Committee: C. I. Bacon, Stormont Electric Light and Power Co. Ltd., Cornwall, Ont.; W. L. Bird, Kaministiquia Power Co., Fort William, Ont.; P. R. Craven, Northern Telephone Co. Ltd., New Liskeard, Ont.; Dr. W. Doan, Harrietsville Telephone Co., Harrietsville, Ont.; R. L. Dobbin, Public Utilities Commission, Peterborough, Ont.; R. Harrison, Scarborough Township Public Utilities Commission, Toronto, Ont.; J. E. Lawson, Canadian Niagara Power Company, Niagara Falls, Ont.; A. B. Manson, Public Utilities Commission, Stratford, Ont.; W. H. Munro, Ottawa Light, Heat and Power Co. Ltd., Ottawa, Ont.; A. E. Pickering, Great Lakes Power Company, Sault Ste. Marie, Ont.; H. L. Sanborn, Abitibi Electric Development Co., Toronto, Ont.; R. J. Smith, Public Utilities Commission, Perth, Ont.



LUCKY LADIES! The wheel of fortune turned and one of the lucky names drawn was Marion Corby (left illustration) who is seen receiving her prize from Mrs. R. E. Brown, wife of the president of the Ontario Hydro-Electric Club. Margaret Gahagan, convener, and Helen Dunlop look on. On the right, another prize winner, Jean Glover, receives her "booty" from Mrs. Challies, wife of the Hon. G. H. Challies, vice-chairman of the Commission.

AID WAR EFFORT!

PROCEEDS amounting to approximately \$83 from the H.E.P.C. ladies' annual bridge have been turned over to the Consolidated War Services Fund. This year's event was held at the Royal York Hotel on April 7. Committee members in charge of the affair were: Margaret Gahagan, convener; Helen Dunlop, secretary; Mary Jane Oulahan, treasurer; Dorothy Fromow, Bruce Irvine, Marie O'Rourke, Norma Chambers, Winnifred Walker, Eunice Wands, Winnifred Wallace, Margaret Robertson, Rhoda Browne, Edith Thomas, Jean Hall, Thelma Jenner, Nancy Watt, Olive Bell, Therese Dillon and Lorraine Gauthier.

Photographic impressions of the gathering are portrayed on this page.



STREET LIGHTING FOR TOMORROW

By GEO. G. COUSINS,

Supervising Lighting Engineer, The Hydro-Elect
Power Commission of Ontario.

WHEN, in the performance of his duty, a police officer kills a man it becomes a matter of grave concern. The officer may be suspended pending investigations. The matter receives wide publicity through the press. If a man-hole cover is blown off by an explosion and one or more persons are killed or injured; or when a pleasure boat capsizes with the loss of a few persons, there are investigations, all directed to the one end—to determine the cause and how its recurrence may be prevented.

Statistics often tell interesting and tragic stories. For example, during 1943, 11,025 accidents occurred in Ontario. In 507 of these accidents 549 persons were fatally injured, and in 6,403 cases, 8,628 persons were injured. In segregating the night-time accidents from the total we find that 132 (46%) of the fatal accidents, and 2,646 (40%) of the injury-accidents occurred at night. The corresponding property damage amounted to approximately \$700,000.00.

Accident Rates

As long as motor vehicles have been in use there have been accidents, and there are no grounds for assuming that accidents will not continue. Human nature is practically a non-controllable force. The number of accidents occurring in broad daylight represents what might be looked upon as the inevitable proportion. The basis of appraisal of motor vehicle accidents is the number of accidents per 1,000,000 miles of vehicle travel, referred to as the "accident rate."

In normal times the night accident rate is much higher than the day rate: about $\frac{2}{3}$ of the accidents occurring at night with about $\frac{1}{3}$ of the traffic on the roads and highways. War-time restrictions on travel brought changes, and these changes have been for the worse, according to

CONSIDERABLE attention has been given to post-war trends and applications in various fields of science and engineering. In this connection, many municipalities are making plans for installation of better street lighting as soon as materials become available. Already some of these plans are taking shape. In Toronto, for example, the Toronto Hydro-Electric System is experimenting with a new and more efficient type of street lighting on University Avenue.

Some interesting facts emphasizing the vital need for adequate illumination on streets and highways are outlined in the accompanying article written specially for Hydro News by George G. Cousins, the Commission's Supervising Lighting Engineer.—The Editor.

accident rates. All indications point to an unprecedented peak in car travel as soon as restrictions on cars and gasoline are removed. It is reasonable to assume that fatalities and injuries will also reach peaks unless steps are taken to eliminate or, at least, to reduce the major causes of night accidents.

Many aggressive campaigns have been conducted to promote safe travel. It cannot be said that education-of-the-driver campaigns have made lasting substantial reductions in the accident rate. Consequently, the day accident rate may be taken as the base rate.

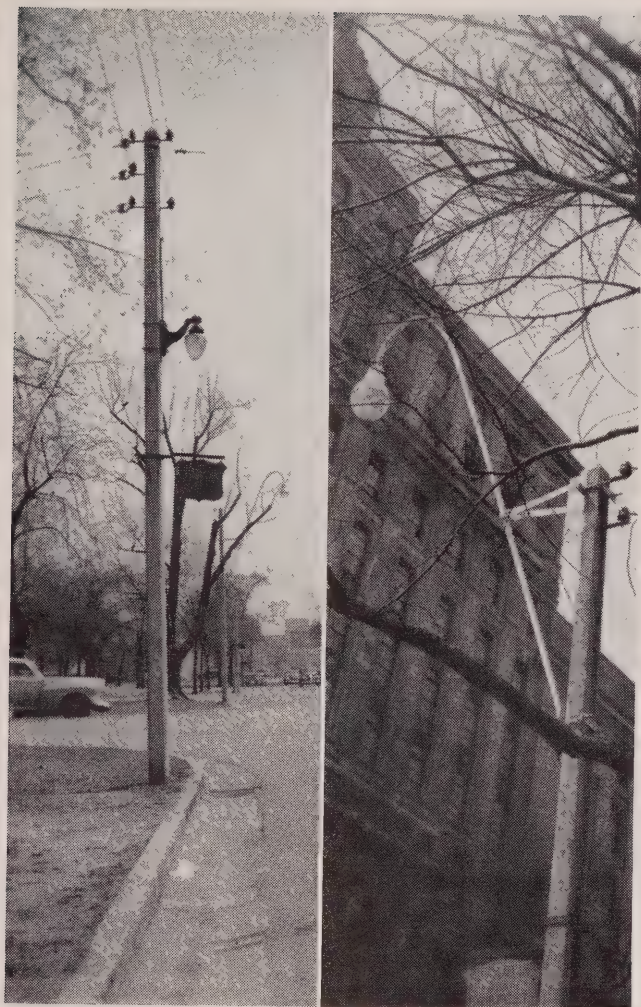
The night accident rate has been attacked in several locations with real success, and it has been well established that it can be reduced to the day rate.

Day and Night Conditions

The only basic difference between day and night conditions is in the visibility. Ordinarily, the visibility during daylight is more than adequate for safe driving. There may be exceptions during severe storms and for a short time before sunset when one faces west. The intensity of



THESE TWO photographs, taken at night, show the contrast between the new type of street lights (left) and the old type (right) on University Avenue, Toronto. The experiment with this new and more efficient type of street lighting is being conducted by the Toronto Hydro-Electric System.



UNTIL RECENTLY, the type of street light shown on the left was in service on University Avenue, Toronto. The new type of light, which has just been placed in service, is shown on the right.

illumination will range from a couple of foot-candles to thousands. On the other hand, at night it will be only a very small fraction of one foot-candle under any but the best street lighting.

With a high night accident rate under low intensity of illumination and a lower rate under the abundance of daylight, where is the dividing line in intensity under which the night rate may be reduced to the day rate? In two American cities in particular, namely, Hartford, Conn., and Detroit, Mich., attempts were made to provide an intensity of illumination that would render night driving as safe as day driving. The illumination was increased by progressive steps, and with each increase there was a corresponding decrease in the accident rate. It was found that the night rate decreased to the day rate at an intensity of artificial illumination of $\frac{3}{4}$ foot-candle. This is about 7 times full moonlight. This is indeed a very modest intensity for the achievement of such remarkable results. Is it worthwhile?

An analysis of street lighting and traffic safety by a

large insurance company reveals the significant fact that cities having the lowest per capita cost of street lighting, consequently the poorest conditions for night visibility, have the highest night fatality rate, also the highest public liability insurance premiums. Another analysis showed that the more light there is on the roadway, the lower are the accident insurance rates. The rate in the best-lighted city was less than half that in the poorest. The rates are based upon the amount of money that has to be paid out in payment of claims for damage. This fact furnishes ample proof of the value of accident prevention through adequate street lighting. This is only a matter of dollars and cents. What about the lives that are saved and the reduction of human suffering?

Street Lighting Plans

Municipal officials have a direct responsibility to protect the lives and property of their citizens. If a driver breaks an axle or ruins a tire through striking a hole in a road, he can usually recover the cost of the damage by charging negligence on the part of the municipality and the hole is immediately filled in, or otherwise repaired, because it might cost more money if not repaired. In contrast to this, several persons may be killed on a poorly lighted street and very rarely is there an attempt made to ascertain the cause and apply the remedy. The same causes produce the same effects year after year without the relationship being apparent. It is not inferred that the failure to provide lighting for safety is due to wilful negligence, but too often street lighting is looked upon as a direct overhead charge on taxes. It should be looked upon as a safety measure in the same way that pure water and adequate sanitation are—in other words, as a valuable asset in preserving life.

There are many factors that affect the efficacy of street lighting, such as: the location of the units with respect to the curb, their height, their location with respect to intersections and to curves, trees, schools, theatres, etc. A street lighting plan must be preceded by a detailed study of the municipality, taking into consideration the flow of traffic with special attention paid to hazardous spots. The type of fixture and lamp size for one street may not be best for another. Generally, the cost of modern

(Continued on next page)



AT AYLMEER, the folk are quite proud of their "Great White Way." The above illustration gives an impression of the lighting on the main street.

IN 1918 THEY SIGNED IN COMPIEGNE FOREST

By Harry M. Blake

MEMORIES of the signing of the Armistice at the close of the First World War will be brought very vividly to the minds of many Canadian veterans by the recent unconditional surrender of Germany in this war.

It was three o'clock in the afternoon of the 7th of November, 1918. The troops of the 3rd and 4th Canadian Divisions were still battling with retreating German rear-guards on their push up from captured Valenciennes to Mons. Fire had ceased, however, on the French sector bordered by the Chimay-Fournies-La Capelle-Guise roads. All was quiet there for the arrival of the German delegates, who were to sign the Armistice codicil, was expected momentarily.

Heard Clatter of Horses

Down the road that passed through the French outpost at Chimay was heard the clatter of horses, and a German lieutenant, magnificently mounted and accompanied by an orderly, trotted up. He told the French captain, who went out to meet him, that the automobile containing the German plenipotentiaries had broken down somewhere on the La Capelle road and that they could not get through. He wanted assistance, but the Frenchmen were averse to leaving their posts without definite orders, and the German car arrived some hours later under its own power.

In the commodious but mud-bespattered limousine were the new German Government's secretary of state, Matthias Erzberger, General H. K. A. Winterfeld, Count Alfred von Oberndorff, General von Grünell and Naval Captain von Salow.

These delegates had left German headquarters at Berlin on November 6th, and according to their own accounts, they were given a tour through many miles of the devastated areas by their French escorts. Often the French guide who sat in with their chauffeur would call out the names of towns, and villages and hamlets now in ruins, in a significant tone, as if desirous of impressing them with the horrors of the German invasion and what would happen to their own country if the war went on, now that the tables were turned and the Allies were prepared to push right ahead, with a spear-head of British Handley-Page bombing planes which could range as far as Berlin.

Reached Foch's Headquarters

Now these delegates were provided with a train, and on the morning of November 8th they reached Marshal Foch's headquarters—also a train—in the Forest of Compiègne.

The Marshal greeted them with that fine irony that a Frenchman can make so devastating and still preserve an outward mien of politeness.

"Qu'est ce que vous désirez, messieurs?" (What is it you desire, gentlemen?) were the words of his greeting. And Admiral Wemyss, who stood at his side, representing Britain had nothing to add.

The terms of the Armistice were hard—at least so it seemed to the German delegates, who apparently still indulged in ideas of "Deutschland Uber Alles." All German territory on the left bank of the Rhine was to be occupied by Allied troops. On the right bank a neutral zone was to extend for many miles east with Allied bridge-heads extending to a depth of thirty-five kilometers. All German naval shipping was to be surrendered. Arms of war were to be handed over and their manufacture in Germany was to cease. Heavy indemnities were to be exacted.

Canadians Entered Mons

The German envoys demurred. Foch shrugged his shoulders and went back to his train.

On the morning of November 11 the Canadians entered Mons. There had been no preliminary artillery barrage necessary because the Germans were now in headlong retreat. A few Canadian batteries fired salvos to celebrate the last victory of the war at 10:59 a.m.

The Armistice, which had been signed on the same day at 5 o'clock and was to go into effect on all fronts at 11 "hours," bore the following names: F. Foch, R. E. Wemyss, Erzberger, Oberndorff and von Salow.

STREET LIGHTING

(Continued from previous page)

efficient street lighting will be higher than the old lighting that it replaces. The difference will represent the cost of saving lives, reducing injuries with their inevitable suffering, to say nothing of the monetary saving so far as cars and property are concerned. The logical way to rehabilitate a street lighting system is to start at those sections where there is the most traffic or the most accidents, and to proceed by progressive steps and in so doing spread the cost over a number of years.

Learned From Experience

Much has been learned from experience during the enforced reduction of lighting as a wartime measure. For instance, the elimination of show-window lighting was followed by a reduction in the number of accidents; conversely, the restoration of window lighting was accompanied by an increase in the number of accidents. The same applied to Neon and other illuminated signs. They cause confusion patterns that reduce visibility. It cannot be expected that show-window lighting and signs will be eliminated, but such distractions must be counteracted by increased intensity of street lighting.

Only by careful attention to these and other details can the full effectiveness of the lighting be achieved. The overhead and maintenance cost of a well planned and efficient system need not be higher than that of an obsolete system.

Lighting Can Save Lives

Experience has proved that proper street lighting can and will save many of the lives that would otherwise be sacrificed to the demands for speed and travel in general. The material for a frontal attack upon this problem is not available at this time but this problem should be at the head of list of post-war projects. Plans should be prepared and preparations made for executing them when the necessary equipment becomes available.



FEW HYDRO gardeners suspected that they would be "shot" in a darkened room while watching a movie. These two reproductions show the results of this experiment made at their annual dinner.

GARDENERS GATHER FOR ANNUAL EVENT

FLOWERY language in a very literal sense was heard at the annual spring dinner meeting of the Ontario Hydro-Electric Horticultural Club in Central Y.M.C.A., Toronto, on April 27, J. J. Traill, the president, presiding.

Valuable information and advice on laying out the spring garden was passed on to eighty enthusiastic club members and their friends by guest speaker John Hall, president of the Ontario Horticultural Society, who really got down to earth on his subject. Mr. Hall's address was supplemented by beautiful coloured slides, showing how an unattractive and poorly arranged garden can, by proper care and design, be converted into a setting of beauty. "Your garden is your outdoor living room," Mr. Hall declared. "Care for it as you would care for the interior of your home!"

One of the highlights of Mr. Hall's address was the emphasis he placed on the importance of giving the time and effort necessary for the preparation of the soil before doing any planting. Some would-be gardeners, he pointed out, dug small holes in the ground and expected big blooms and vegetables. Mr. Hall explained that it was necessary to dig down and loosen ground below top soil.

An added feature of the evening was the showing of a technicolour movie, "Algonquin Adventure," filmed and narrated by Dan Gibson and Keith Latter, two discharged R.C.A.F. boys who met in Christie Street Military Hospital at Toronto, and planned a three months' adventure in beautiful Algonquin Park.

A striking floral bouquet donated to the meeting by Bob Harrison of the operating staff at Bridgman transformer station, was auctioned off to the highest bidder by secretary H. R. ("Russ") Hill. After a short, spirited contest the coveted basket was "knocked down" to Adam Smith of the H.E.P.C. head office staff.



DISCUSSES ARC WELDING

"MUCH criticism has been levelled at arc welding as a means of fabrication, because there is not yet any simple non-destructive quick and ready method of telling whether a weld is good or bad after it has been completed," according to W. D. Walcott of the H.E.P.C. laboratories, in a paper on "Destructive and Non-Destructive Tests for Arc Welding," delivered before the Canadian Welding Society recently.

He went on to say, that attempts have been made to put tools into the hands of a welding inspector, tools which correspond to the hammer and washer used in testing rivets, but it would seem that just as the engineer had had to change his designs to suit welding, so the inspector had to devise new methods of testing welds which would give satisfactory results.

The speaker pointed out that up to the present the most satisfactory method of obtaining good welds appeared to be the use of good designs with suitable materials, and efficient workmen, along with careful supervision at all stages of fabrication, and the application of such auxiliary tests as might be needed to suit the requirements of the job.

PIANO PRESENTED BY HYDRO GIRLS' CLUB



"DON'T Fence Me In" may have been the number which Velma Dawson (at piano) thought most appropriate when she looked around this group. This illustration shows that good use is being made of the piano which was purchased by the Ontario Hydro Girls' Club and presented to the boys in the North Annex of Christie Street Military Hospital, Toronto.

Of the \$1,500 appropriation allowed for this year's activities, the girls undertook to raise \$500 of that amount. The members are still faced with the task of raising approximately \$240, which objective they are seeking to accomplish through draws and other activities.

Committee members of the Ontario Hydro Girls' Club are: Isobel Wilson, Margaret Scales, Olive Lowe, Beatrice Clarke, Gladys Davis and Olive Bell. Mrs. Kay Stockwell and P. T. Seibert are honorary members of the committee.

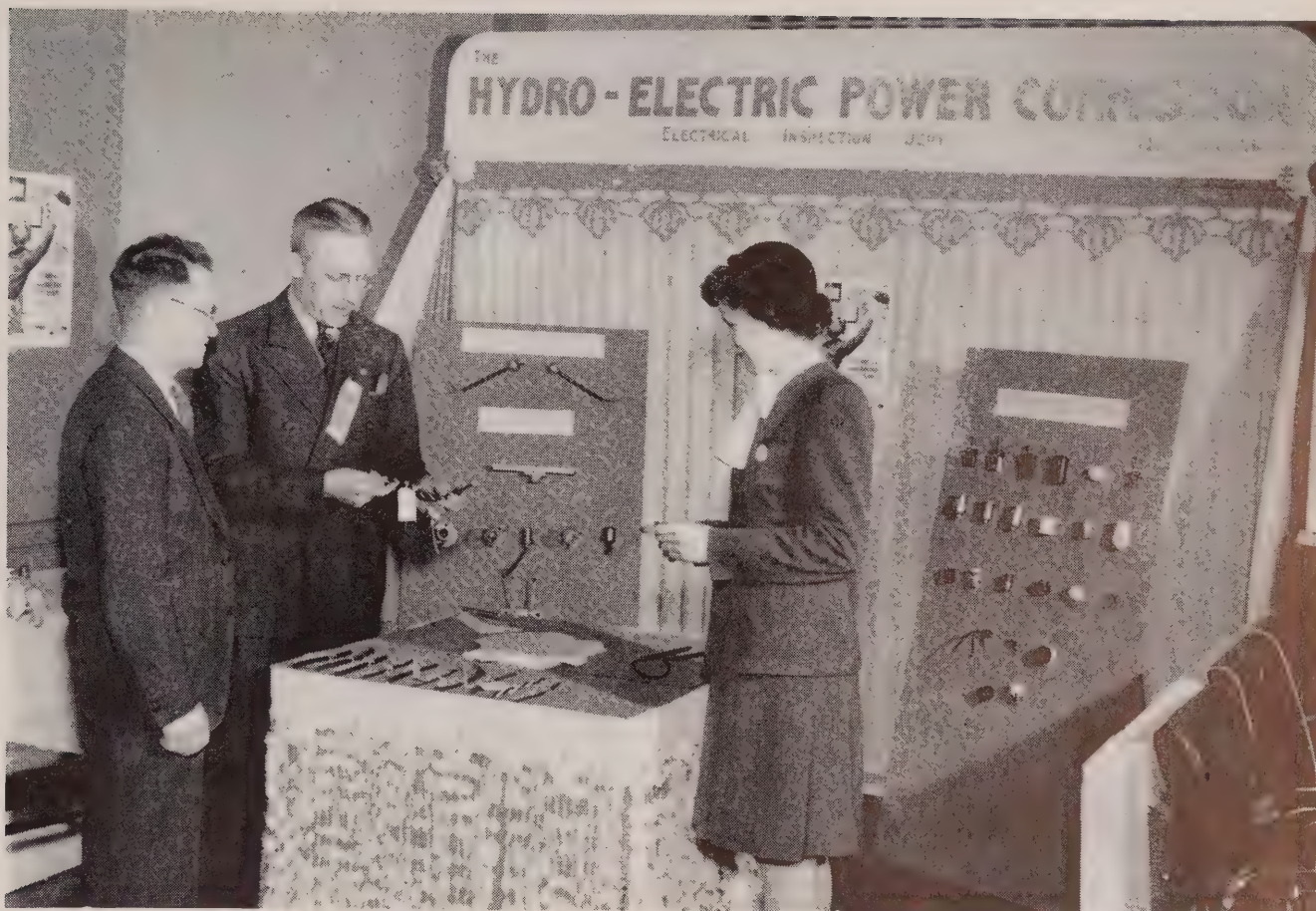
"DORIAN GRAY" PREVIEW

While the reviewing of movies is not a regular beat of personnel or institutional publications, such as *Hydro News*, the members of the Canadian Association of Personnel Publication Editors, better known as CAPPE, were asked to attend a special preview of the picture "Dorian Gray." The invitation was extended by Regal Films in order to get the reactions of these editors to this unusual film.

The screen dramatization of Oscar Wilde's novel, "The Picture of Dorian Gray," follows the story with unusual fidelity, and the period atmosphere of the late Victorian era is remarkably well achieved. The brilliant satire which characterizes "Lady Windermere's Fan" and the "Importance of Being in Earnest" is sustained by the Mephistophelian Lord Harry Wotton, a role admirably enacted by

George Sanders. In many respects, however, this work of Wilde's, although published in 1891, would seem to belong to the period marked by "The Ballad of Reading Gaol" and "De Profundis." There is a strong counter-play of the moral element and an emphasis upon the generally accepted Christian doctrine of personal responsibility for the hedonistic and infamous life to which Dorian Gray succumbs, and which is reflected as a constant reminder in the portrait painted by Gray's friend, the artist, Basil Hallwood.

Hurd Hatfield, as Gray, Lowell Gilmore as Basil, and Douglas Walton in the part of Allen Campbell are excellent, while the actress, Sibyl Vane, and Basil's niece, Gladys, are brilliantly portrayed by Angela Lansbury and Donna Reed. The subordinate characters are impressive.



THIS IS a view of the H.E.P.C. electrical inspection department exhibit at the annual convention of Industrial Accident Prevention Associations, held at the Royal York Hotel, Toronto, on April 9 and 10. The Hydro booth was one of 26 displays arranged in the interests of safety. The convention was attended by more than 3,000 registered guests from various parts of Canada and the United States, the majority being from Ontario. H. J. McCaw (centre), sales control inspector of the H.E.P.C. electrical inspection department, is shown demonstrating wiring practices to interested visitors.

HEADS TORONTO SECTION A.I.E.E.

A. H. FRAMPTON, assistant electrical engineer of The Hydro Electric Power Commission of Ontario, has been elected chairman of the Toronto section of the American Institute of Electrical Engineers.



At the annual meeting of this section, held at Hart House, Toronto, recently, J. F. Moore of Toronto was elected secretary, while directors for the ensuing year are: Prof. A. R. Zimmer, T. C. D. Churchill, C. E. McWilliam, H. R. Osborne, all of Toronto, and J. M. Somerville and J. T. Thwaites of Hamilton.

Mr. Frampton, the new chairman of the Toronto section, who is widely known in electrical engineering circles, is a Fellow of the Institute and has been identified with the Hydro for over 25 years.



CONSTITUTION SQUARE at Athens, Greece, is the scene reproduced above. The photograph was taken on the night after the visit of Prime Minister Winston Churchill of Great Britain at the conclusion of Greek peace negotiations. Flood-lighting the background directs attention to the Parthenon.

HARNESSING HORSEPOWER

(Continued from page 13)

means of long boom derricks or travelling cranes. When the frame is up, the powerhouse crane is lifted into position. The parts of this crane, especially the trolley, are very heavy pieces. Great care and frequently much ingenuity, must be exercised in handling them to avoid mishaps.

The next step is the building of the walls and the concreting of the roof slabs. Subsequently, the concreting of the various floors of the up-stream part of the superstructure is proceeded with.

Completing Turbine Equipment

As soon as the building is sufficiently weatherproof, the assembly and installation of the moveable parts of the turbine is undertaken.

With the assistance of the travelling crane, the lower guide vane ring is placed in position. This ring contains the bottom bearings for the shafts of the moveable guide vanes. Then the vanes themselves, are lowered into position. These operations are followed by the placing of the runner and shaft of the turbine. The shaft must be carefully centred so that it may be accurately connected up with the shaft of the generator, and the water-tight head cover containing the upper bearings of the moveable guide vanes is then placed. The installation of the governor and of the mechanism operating the guide vanes follows.

Erecting the Generator

When the work of erecting the turbine has advanced to an appropriate stage, the erection of the generator is started.

The generator consists of three parts—the stator or stationary section, the rotor or moving part, and the upper and lower brackets to support the shaft and its bearings. The lower bearing is merely a guide bearing, but the upper one is both a guide and thrust bearing. It carries the total weight of the turbine runner and the generator rotor with their shafts, as well as the water passing through the turbine.

The position of the bearings is determined before the rotor is installed. They are accurately aligned and levelled, and the brackets supporting them are fixed or doweled. The upper bracket and the lower bearing are then removed, and the rotor is placed. Bracket and bearing are then again set in position—this time permanently—and the half-couplings on the turbine and generator shaft bolted together, thus connecting up the mechanism required for the generation of electrical energy from water power.

By the time the power house is ready to function in the role of a generating station, all essential construction work on the development has been completed. The head-water reservoir controlled by the dam is filled. At the intake and head-works everything is in readiness to play its part. The day for the actual testing of all the equipment has arrived.

The Mechanical Run

Water is admitted to the turbine scroll case, and the unit is now ready for what is known as the "mechanical

MAKES FINAL PAYMENT



EAST YORK Hydro is now free of debt. Final payment of debentures was made by the East York Township Hydro-Electric Commission to the East York council. In the above illustration, Albert G. Jennings, chairman of the East York Hydro Commission, (extreme left), is shown handing over a cheque for \$49,982.54 to reeve John Warren. James Wickiam, Hydro superintendent, and William Heaton, (extreme right) township controller, are looking on.

A cheque for over \$28,000 was also turned over to the H.E.P.C., being final payment for the five substations in the township.

REPORTED MISSING

BRUCE MOREAU, R.C.A.F., formerly of the H.E.P.C. stores accounting department at Strachan avenue, has been reported missing. Mr. Moreau was on the Commission's staff from August, 1940, until August, 1942.

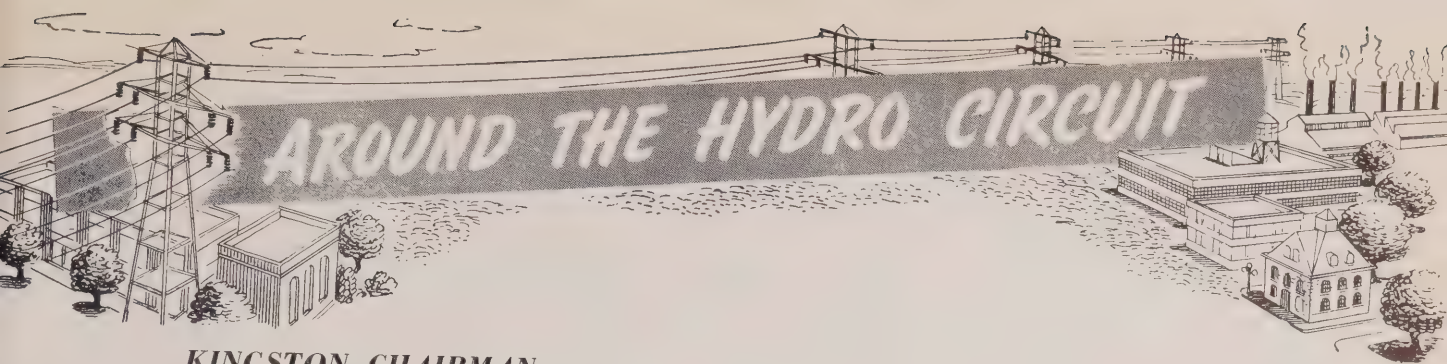
run" to check bearing temperatures and alignment of the turbine and generator shafts.

The turbine gates are opened sufficiently to cause the unit to rotate at half normal speed. Shaft eccentricity and bearing temperatures are observed. If they are normal, the speed is increased, first to three-quarters of normal and then to normal. Observations are repeated at each acceleration.

The Electric Run

If these observations reveal normal conditions, then the generator is ready for the "electric run", the purpose of which is to expel moisture from the insulation of the windings. After this run has been completed, a high voltage test is applied to the windings, and the electrical performance of the generators and exciter is checked. After the checking of other electrical equipment auxiliary to the generator, the unit is ready to produce power.

The power house gets down to business. The transformers step up the voltage, and the electrical energy derived from another new development of The Hydro Electric Power Commission of Ontario is transmitted perhaps a hundred miles or more to city, town or municipality.



KINGSTON CHAIRMAN

THOMAS ALEXANDER ANDRE, after eight years' service as commissioner, was elected chairman of the Kingston Public Utilities Commission in 1943. Mr. Andre, a general contractor in private life, was born at the beginning of that illustrious decade known as "the gay nineties".



T. A. Andre

This active official has taken a leading part in the city's municipal life. He was a member of Kingston city council for four years, chairman of the city parks body for two years, and also served as chairman of the board of works.

Mr. Andre is a past president of the Kingston Chamber of Commerce and a member of the Rotary Club. He has one son on active service with the Royal Canadian Engineers, with the rank of Lieutenant; one son in the R.C.A.F., and two sons, graduates of Queen's University, in the service of the Dominion Government.

A sports enthusiast, Mr. Andre is a close follower of baseball and hockey, and enjoys hunting.

HYDRO MANAGER AT KINGSTON

C. C. FOLGER, general manager and secretary, Kingston Public Utilities Commission, has been associated with Hydro progress in "The Limestone City" for many years. Kingston's strategic industrial location has made it an important centre for war output, and the city's production record has been sparked to a great extent by the availability of electric power.

Mr. Folger's devotion to the cause of Hydro in time of peace and war has done much to further the city's progress generally. His genial manner and ready wit have made him a well-known figure in Hydro circles.

FINE RECORD OF SERVICE

JAMES HALLIDAY, Kingston public utilities commissioner, has spent some 35 years in municipal service. After serving the school board and council of his native village of Portsmouth and holding the position of Reeve for 11 years, he was elected warden of Frontenac County in 1916. Upon taking up residence in the city of Kingston, Mr. Halliday was elected a commissioner of the utilities body, where he has rendered faithful service for more than 18 years, half of that period as chairman.

Since his retirement from the electrical contracting business in 1930, Mr. Halliday has spent most of his time in furthering the interests of Hydro in Kingston.



Jas. Halliday

KINGSTON COMMISSIONER

JAMES HARRIS, Kingston commissioner, was born in Edinburgh, Scotland, where he attended well-known George Heriot's College. Mr. Harris served for four years and nine months in the first Great War, and during the present conflict he acted as electrical superintendent for the Department of National Defence (Military District No. 3) for three and a half years. He is an electrical contractor in the city of Kingston.



James Harris

For upwards of 17 years, Mr. Harris has given devoted service to the interests of Hydro in "The Limestone City." In his leisure hours, the commissioner finds pleasure in fishing and boating.

ON KINGSTON COMMISSION

ALBERT E. STANSBURY, public utilities commissioner, was born and educated in Kingston, where he has served the city in many capacities. Mr. Stansbury acted as public school trustee for one year and alderman for six years, and has been on the Kingston commission since 1941.

Mr. Stansbury, who is an adjuster in Kingston, is a keen sports fan, with a special fondness for boating and fishing.

MAYOR OF KINGSTON

CECIL LEROY BOYD, mayor of the City of Kingston, has had a long record of municipal service. After serving two years on the municipal board of education and acting as alderman for six years, Mr. Boyd was elected mayor of Kingston in 1944, thereby becoming a commissioner of the city's public utilities body.

A dairy and creamery proprietor in Kingston, mayor Boyd was educated at Queen's University.

REPORTED KILLED

WILLIAM JACK ELLIS, R.C.E., formerly of the H.E.P.C. testing and inspection department, has been reported killed. Prior to Mr. Ellis' enlistment in June, 1941, he had been in the Commission's employ as a stock-keeper for over three years.

F/O WILLIAM JOSEPH C. WATSON, R.C.A.F., formerly of the H.E.P.C. municipal department, has been reported killed. F/O Watson entered the Commission's employ in June, 1937, and at the time of his enlistment in January, 1942, was employed as a lineman at Owen Sound.



Hydro HOME FORUM

by *Edithemma Muir*

HOME ECONOMIST

EVERYBODY is on the march!—men and women of the services and workers on the home front. And the familiar wedding march still sets the tempo for starry-eyed youngsters as they embark upon one of life's greatest adventures.

And speaking about weddings, although arrangements are now simplified we still conform to traditions and follow much the same pattern of pre-war days. Even if the party is to be informal, plans should be made well in advance, and in keeping with the circumstances of the bride.

Needless to say, it's a little more difficult to plan a wedding feast with rationing in vogue, but the family won't mind skimping for such a happy occasion. Of course, wedding guests are limited in wartime, so that may help the hosts conform to the food regulations.

SUGGESTIONS

1. For a wedding breakfast nothing is nicer than hot chicken and mushroom patties, or serve the creamed food between hot tea biscuits or in toast shells, then include salad rolls or cress-fingers, assorted cakes, wedding cake and punch.

2. For a buffet luncheon you might choose a chicken salad plate with marinated asparagus or moulded vegetables, assorted canapes, cress rolls; a mound of sherbet or slice of ice cream, small cakes, bride's cake and punch.

3. A simple repast for a late afternoon might consist of a fruit salad that is a picture of daintiness and colour, sandwiches trimmed and shaped; tinted meringues, bride's cake and punch.

SMALL CAKES

We have many recipes on file using small amounts of shortening and sugar for such delicacies as Jam Jumbles, Fruit Balls, Tropical Cookies, Pinwheels, Maid of Honor Tarts, Fig Bars and others.

THE BRIDE'S CAKE

Last-minute arrangements make it necessary to buy an uniced fruit cake which is served with punch. But if you are able to have the cake made weeks in advance and iced shortly before the wedding the traditional cake-cutting ceremony may take place after the sandwiches and tea are served. (The bride simply puts the knife in the cake to cut it once.)

AS FOR TEA—3 ounces (that is, $\frac{3}{4}$ of a $\frac{1}{4}$ lb. package) will make 2 gallons, if the water is really boiling. Remember to infuse the tea for five minutes.

SANDWICH FILLINGS—(seasoned with salt and pepper): mashed cooked fish; minced meats; chopped hard cooked eggs and mayonnaise; shredded corned beef with grated raw carrot, finely-cut green celery and catsup; minced cooked sausages and hard cooked eggs with dressing; chopped fried mushrooms with ground pork and thick dressing; minced cooked chicken with finely-cut celery and minced parsley or nuts; finely shredded spinach or lettuce with a small amount of minced green onion.

Pair white and brown slices, spread with butter and filling and cut in rectangular pieces.

Use thin brown slices or alternate brown and white slices; build up four or five; butter the inside slices and spread these with a minced filling; stack again, wrap the block, weight down and chill. Then slice at serving time.

Pinwheels are made by slicing a fresh sandwich loaf lengthwise. Trim crusts and spread with butter and paste-like filling. Place a centerpiece for the roll about one inch from an end, then roll up like a jelly roll: wrap and chill in electric refrigerator. The favourite filling for these are peanut butter with a wedge of banana in the centre; pink-tinted cream cheese with maraschino cherries; minced meat with a finger of raw carrot; fish paste with cooked asparagus.

Finger rolls are made of rectangles of buttered bread rolled around cooked asparagus, quarter of a carrot, or piece of meat. If you have time, stick a piece of watercress or parsley in each end before serving.

OPEN-FACE THOUGHTS: (1) Sliced tomato on circles of buttered bread is a favourite. Be sure to season with salt and pepper and sprinkle with a little parsley. (2) On the circles spread salad dressing and top with sliced radishes, wedges of sliced cucumber, tinted cheese with strip of green pepper placed in shape of horseshoe, etc. (3) Use rectangular pieces of bread spread with tangy cheese and topped with sardine, or relish sandwich filling topped with minted green peas. (4) Use odd shaped pieces of bread after the circles have been cut out to make fancy tid-bits spread with peanut butter, minced fish, or other paste fillings.

Blossom Time



CAPTURING THE delicate beauty of the pink and white raiment in which the fruit trees of the Niagara Peninsula greet the spring, these interesting camera impressions of Blossom Time were made in the Beamsville district by J. H. Mackay of the Commission staff.

Lighter Lines

Hair specialist claims his tonic will grow hair on a billiard ball.

But who wants hair on a billiard ball?

* * *

Kitty: "I just came from the beauty parlour."

Katty: "Too bad they were closed."

* * *

When asked for a book on current literature, the new librarian produced a volume on the discovery of electricity.

* * *

Hitler's retreat from Stalingrad will probably be recorded as the greatest comeback in history.



"It's funny! At home he always does it the first time!"

"Dear Mother," wrote Johnny, "I joined the navy because I always admired the way the ships were kept so nice and clean. But I never realized until this week who keeps them that way."

* * *

Sergeant: "Why didn't you turn out at reveille? Didn't you hear the bugle?"

New Recruit: "Yeah. I heard the bugle blow, sergeant. But I never had no ear for music. I can't tell one darned tune from another."



"I'm familiar with ALL types of whistles!"

ON THE FARM

The wash rotates in creamy suds
While vacuum cleaners softly hum.
The cows are chewing sweeter cuds,
And hens are clucking. Hydro's come!

* * *

Visitor: "To what do you attribute such good health at your advanced age?"

Oldest Inhabitant: "Well, I reckon I got off to a good start before people invented them vitamins."

* * *

A sailor adrift on the main
Had signalled an aircraft in vain;
So he just gave a hail,
And a pro-ally whale
Kindly spouted him up to the plane.



Uh! Oh! Here come the wolf cubs!"

June: "Who was that man I saw kissing you in the hotel foyer?"

Julie: "I couldn't just place him at the time, but he seemed to know me pretty well."

* * *

"If I were trying to match politeness," exclaimed the woman who had been jostled about for two hours at the bargain counter, "I'd have a hard time finding it here."

The sales girl looked up wearily.

"Would you please let me see your sample, madam."

* * *

Newspaper headline reads: "Baby Kangaroo Disappears From Zoo."

Mother, we suppose, was left holding the bag.



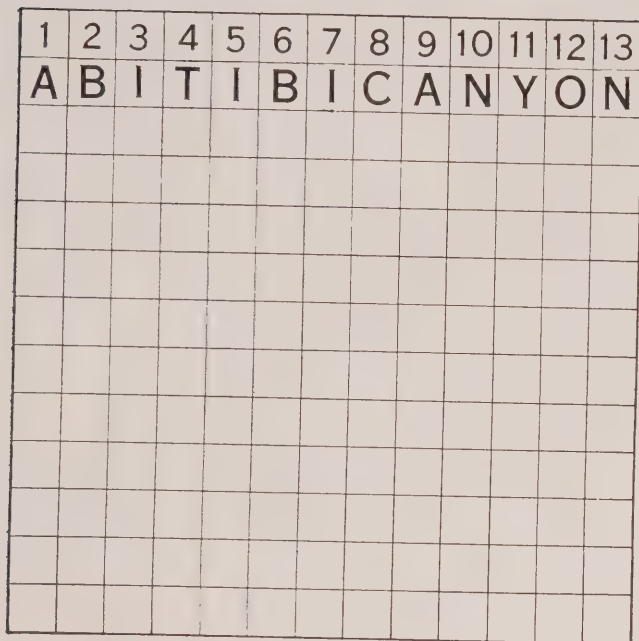
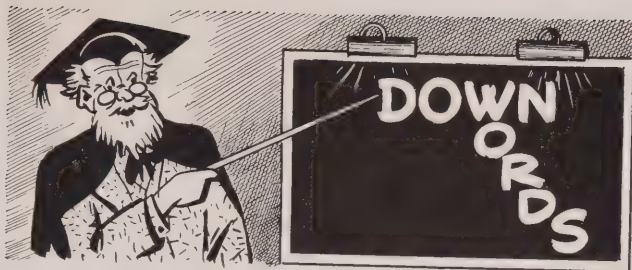
The cross-examining counsel was attempting to discredit the testimony of the fair plaintiff.

"You say you are under thirty years of age. You don't want to revise that?"

"No, I don't," retorted the witness, angrily.

"Well, we'll soon check it. I'll have the records searched."

"You go to it," retorted the witness. "You won't find out anything about me. That old registry office in Rockville burned down in 1895."



PROFESSOR PERPLEXUS has arranged another neat little thirteen-word brain-twister for "Downword" puzzle fans. This time he is taking contestants up North to the great Abitibi Power Development about which so much has been written in Hydro News. It should, therefore, be easy for every reader to get off to a good start. What happens after that will be a matter for each competitor's individual—hem, hem—intelligence and ingenuity.

Don't get lost in the bush—and there's plenty of it up North. Use the compass provided by the definitions. These blaze a trail through the otherwise impenetrable wilderness that anybody, by a little attention and concentration, can follow.

DEFINITIONS

1. Relating to the study of the heavenly bodies.
2. A "rabbity" type of dancing in vogue just before the first world war.
3. Hydro is like this. No use thinking of anything else.
4. Just a weenie. But he was poison to the Maple Leaf forwards when he played for Boston. (2 words.)
5. This kind of peace would mean another war.
6. Sailing on the Spanish Main with the Jolly Roger at the fore-peak.
7. On and off.
8. Hon. George H. Challies is one.
9. Where Nero threw the Christians to the lions.
10. A person over eighty-nine and under a hundred.
11. China's Mississippi.
12. A person over seventy-nine and under ninety.

LAST MONTH'S SOLUTION

1	2	3	4	5	6	7	8	9	10	11	12
N	I	A	G	A	R	A	F	A	L	L	S
E	N	N	R	P	E	R	U	R	I	I	H
T	F	A	E	O	S	C	L	C	L	E	A
H	A	C	T	L	P	H	M	H	L	U	K
E	N	H	N	L	L	A	I	D	I	T	E
R	T	R	A	I	E	N	U	P	E	S	
L	R	O	G	N	O	A	C	U	N	P	
A	Y	N	R	A	D	L	T	H	T	A	E
N	M	I	E	R	E	Q	I	E	I	N	A
D	A	S	E	I	N	G	O	S	A	C	R
S	N	M	N	S	T	Y	N	S	N	Y	E

13. System of names or naming. Terminology.

SOUTHERN ONTARIO SYSTEM EMBRACING NIAGARA, GEORGIAN BAY AND EASTERN ONTARIO DIVISIONS

HORSEPOWER

PRIMARY LOAD

1945
1944
1939

2,500,000

2,000,000

1,500,000

1,000,000

500,000

JAN. FEB. MAR. APR. MAY JUNE JULY AUG. SEPT. OCT. NOV. DEC.

PRIMARY LOADS

AREA SERVED BY	MAXIMUM 20-MINUTE PEAK H.P.		PER CENT INCREASE
	MARCH, 1945	MARCH, 1944	
SOUTHERN ONTARIO SYSTEM	2,104,580	1,964,189	+ 7.1
THUNDER BAY SYSTEM	120,643	117,963	+ 2.3
NORTHERN ONTARIO PROPERTIES	245,466	187,710	+ 30.8
TOTAL	2,470,689	2,269,862	+ 8.8

PRIMARY AND SECONDARY LOADS

SOUTHERN ONTARIO SYSTEM	2,150,881	2,069,410	+ 3.9
THUNDER BAY SYSTEM	134,987	126,542	+ 6.7
NORTHERN ONTARIO PROPERTIES	305,104	235,499	+ 29.6
TOTAL	2,590,972	2,431,451	+ 6.6

MUNICIPAL LOADS, FEBRUARY, 1945

SOUTHERN ONTARIO SYSTEM

NIAGARA DIVISION (25-Cycle)		Population		Population	
	H.P.	Population		H.P.	Population
Acton	1,719	1,903	Erie Beach	8	21
Agincourt	209	P.V.	Essex	586	1,886
Ailsa Craig	138	487	Etobicoke	8,061	V.A.
Alvinston	126	649	Exeter	776	1,654
Amherstburg	1,056	2,704	Fergus	1,290	2,759
Ancaster Twp.	426	V.A.	Fonthill	198	860
Arkona	66	403	Forest	608	1,562
Aurora	1,370	2,821	Forest Hill	7,545	12,172
Aylmer	850	1,985	Galt	12,304	15,126
Ayr	178	760	Georgetown	1,989	2,452
Baden	632	P.V.	Glencoe	214	763
Beachville	797	P.V.	Goderich	1,622	4,674
Beamsville	475	1,227	Granton	69	P.V.
Belle River	197	836	Grimsby	860	1,988
Blenheim	670	1,873	Guelph	12,566	23,074
Blyth	136	662	Hagersville	474	1,524
Bolton	224	629	Hamilton	172,728	164,719
Bothwell	138	683	Harriston	389	1,292
Brampton	2,963	6,157	Harrow	581	1,092
Brantford	23,491	31,622	Hensall	177	686
Brantford Twp.	1,370	V.A.	Hespeler	3,025	2,938
Bridgeport	135	P.V.	Highgate	93	322
Brigden	88	P.V.	Humberstone	629	2,831
Brussels	144	784	Ingersoll	3,446	5,757
Burford	174	P.V.	Jarvis	186	513
Burgessville	48	P.V.	Kingsville	712	2,453
Burlington	1,710	3,925	Kitchener	29,319	35,465
Burlington Beach	417	1,474	Lambeth	145	P.V.
Caledonia	424	1,430	LaSalle	300	907
Campbellville	40	P.V.	Leamington	1,959	6,048
Cayuga	154	700	Listowel	1,500	2,984
Chatham	7,901	17,184	London	45,012	81,567
Chippawa	352	1,228	London Twp.	613	V.A.
Clifford	102	491	Long Branch	1,448	4,258
Clinton	651	1,879	Lucan	193	643
Comber	134	P.V.	Lynden	128	P.V.
Cottam	80	P.V.	Markham	359	1,175
Courtright	56	355	Merlin	107	P.V.
Dashwood	114	P.V.	Merritton	11,632	2,916
Delaware	69	P.V.	Milton	1,527	1,915
Delhi	742	2,430	Milverton	456	994
Dorchester	131	P.V.	Mimico	2,995	8,785
Drayton	144	528	Mitchell	736	1,670
Dresden	502	1,525	Moorefield	71	P.V.
Drumbo	82	P.V.	Mount Brydges	96	P.V.
Dublin	34	P.V.	Newbury	35	298
Dundas	3,301	5,245	New Hamburg	635	1,441
Dunnville	1,490	3,916	Newmarket	1,864	3,800
Dutton	263	830	New Toronto	12,948	9,469
East York Twp.	9,784	41,578	Niagara Falls	10,985	20,371
Elmira	1,423	2,069	Niagara-on-the-Lake	802	1,764
Elsa	476	1,185	North York Twp.	11,119	V.A.
Embro	105	420	Norwich	433	1,301
Erieau	102	218	Oil Springs	190	541
			Otterville	100	P.V.
			Palmerston	637	1,400
			Paris	2,144	4,604
			Parkhill	193	1,029
			Petrolia	980	2,768
			Plattsville	141	P.V.
			Point Edward	1,857	1,199
			Port Colborne	2,093	6,928
			Port Credit	954	1,934
			Port Dalhousie	803	1,599
			Port Dover	440	1,790
			Port Rowan	116	700
			Port Stanley	313	824
			Preston	4,426	6,656
			Princeton	135	P.V.
			Queenston	106	P.V.
			Richmond Hill	518	1,295
			Ridgetown	639	1,986
			Riverside	1,393	5,235
			Rockwood	128	P.V.
			Rodney	147	758
			St. Catharines	30,537	34,541
			St. Clair Beach	79	138
			St. George	188	P.V.
			St. Jacobs	350	P.V.
			St. Marys	1,700	4,009
			St. Thomas	8,608	17,045
			Sarnia	6,975	18,599
			Scarborough Twp.	5,175	V.A.
			Seaforth	1,005	1,782
			Simcoe	2,979	6,304
			Smithville	192	P.V.
			Springfield	69	382
			Stamford Twp.	3,055	8,275
			Stoney Creek	253	933
			Stouffville	295	1,198
			Stratford	7,089	17,163
			Strathroy	1,567	2,834
			Streetsville	199	701
			Sutton	214	949
			Swansea	3,295	7,100
			Tavistock	618	1,080
			Tecumseh	393	2,391
			Thamesford	228	P.V.
			Thamesville	216	816
			Thedford	118	598
			Thorndale	85	P.V.
			Thorold	3,158	5,284
			Tilbury	1,548	1,923
			Tillsonburg	1,680	4,602
			Toronto	398,997	657,612
			Toronto Twp.	3,148	V.A.
			Wallaceburg	4,982	4,802
			Wardsville	36	221
			Waterdown	249	867
			Waterford	475	1,294
			Waterloo	6,462	8,968
			Watford	376	1,023

MUNICIPAL LOADS, FEBRUARY, 1945

	H.P.	Popula- tion		H.P.	Popula- tion		H.P.	Popula- tion
Welland	12,977	14,899	Neustadt	47	43	Kemptville	322	1,230
Wellesley	104	P.V.	Orangeville	727	2,558	Kingston	16,704	29,545
West Lorne	235	768	Owen Sound	6,279	13,559	Lakefield	433	1,301
Weston	5,592	6,234	Paisley	122	530	Lanark	98	686
Wheatley	210	761	Penetanguishene	1,045	4,177	Lancaster	67	570
Windsor	56,173	118,040	Port Carling	109	520	Lindsay	3,803	8,345
Woodbridge	636	1,107	Port Elgin	405	1,415	Madoc	213	1,130
Woodstock	9,702	12,339	Port McNicoll	84	950	Marmora	145	1,004
Wyoming	116	538	Port Perry	263	1,175	Martintown	39	P.V.
York Twp.	20,946	77,175	Priceville	10	P.V.	Maxville	124	811
Zurich	111	P.V.	Ripley	100	420	Millbrook	102	749
(66½-Cycle)			Rosseau	25	305	Morrisburg	328	1,484
Bronte	168	P.V.	Shelburne	234	1,053	Napanee	1,363	3,241
Oakville	1,671	3,369	Southampton	566	1,467	Newcastle	193	701
Trafalgar Twp.	636	V.A.	Stayner	251	1,106	Norwood	155	710
GEORGIAN BAY DIVISION			Sunderland	80	P.V.	Omeme	212	630
(60-Cycle)			Tara	105	510	Orono	98	P.V.
Alliston	430	1,700	Teeswater	148	973	Oshawa	18,163	26,610
Arthur	164	1,089	Thornton	39	P.V.	Ottawa	39,319	150,816
Bala	128	355	Tottenham	101	532	Perth	1,739	4,187
Barrie	4,160	9,599	Uxbridge	291	1,480	Peterborough	15,079	24,977
Beaverton	199	941	Victoria Harbour	64	979	Pictou	1,183	3,400
Beeton	97	617	Walkerton	997	2,534	Port Hope	2,823	4,997
Bradford	184	1,041	Waubushene	79	P.V.	Prescott	1,479	3,318
Brechin	45	P.V.	Warton	333	1,750	Renfrew	243	5,673
Cannington	184	761	Windermere	30	117	Richmond	69	428
Chatsworth	74	333	Wingham	807	2,149	Russell	71	P.V.
Chesley	593	1,812	Woodville	71	439	Smiths Falls	3,077	7,741
Coldwater	188	545	EASTERN ONTARIO DIVISION			Stirling	283	947
Collingwood	2,936	6,249	(60-Cycle)			Trenton	5,279	8,183
Cooks'own	83	P.V.	Alexandria	216	1,976	Tweed	279	1,181
Creemore	121	661	Apple Hill	41	P.V.	Warkworth	79	P.V.
Dundalk	217	686	Arnprior	1,254	4,019	Wellington	216	948
Durham	354	1,874	Athens	102	626	Westport	115	725
Elmvale	153	P.V.	Bath	39	325	Whitby	1,375	4,236
Elmwood	63	P.V.	Belleville	7,861	15,498	Williamsburg	85	P.V.
Flesherton	63	452	Bloomfield	106	636	Winchester	315	1,017
Grand Valley	116	645	Bowmanville	3,202	3,850	THUNDER BAY SYSTEM		
Gravenhurst	1,251	2,261	Brighton	425	1,462	(60-Cycle)		
Hanover	1,320	3,190	Brockville	4,700	11,112	Fort William	17,080	30,370
Holstein	24	P.V.	Cardinal	242	1,602	Nipigon Twp.	229	V.A.
Huntsville	1,227	2,943	Carleton Place	1,812	4,143	Port Arthur	22,144	24,217
Kincardine	746	2,483	Chesterville	312	1,094	NORTHERN ONTARIO		
Kirkfield	25	P.V.	Cobden	121	643	PROPERTIES		
Lucknow	375	856	Cobourg	2,299	5,907	Nipissing District		
MacTier	134	V.A.	Colborne	247	960	(60-Cycle)		
Markdale	170	776	Deseronto	223	1,002	North Bay	5,073	16,013
Meaford	767	2,759	Finch	87	396	Patricia District		
Midland	4,396	6,754	Frankford	155	1,095	(60-Cycle)		
Mildmay	129	764	Hastings	138	823	Sioux Lookout	328	1,967
Mount Forest	478	1,936	Havelock	181	1,103	Sudbury District		
			Iroquois	247	1,123	(60-Cycle)		
						Capreol	275	1,660
						Sudbury	10,099	36,724

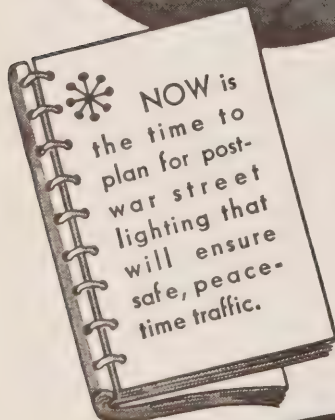
THIS STREET IS...

SAFELY *Lighted* ❄



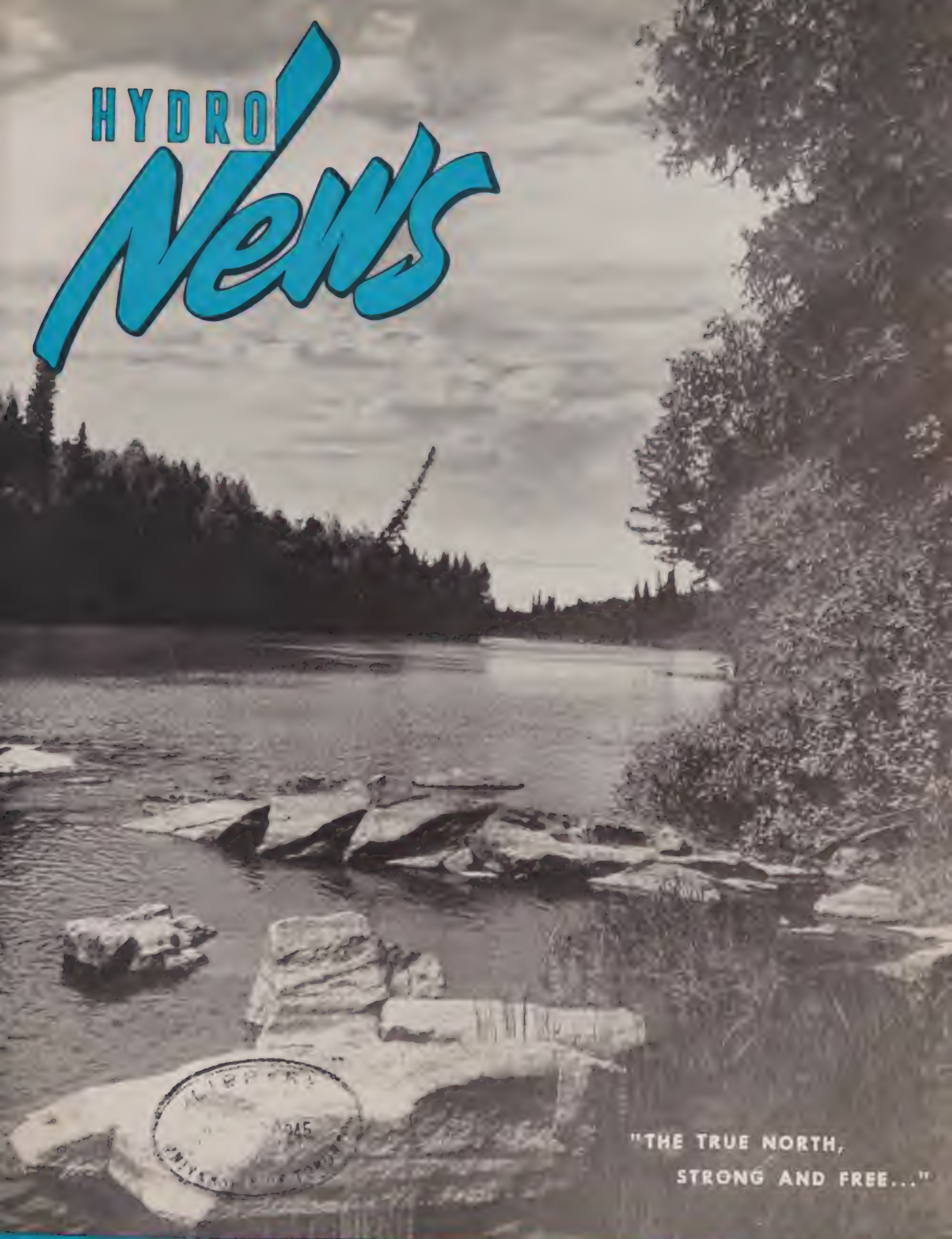
Make your Post-War Plans Now... for Safe, Efficient Street Lighting

Properly lighted streets are safer streets for every form of traffic. But, to be efficient, street lighting must be planned. The details of traffic flow, unusual or hazardous sections, expected changes in future transportation methods . . . all these must receive careful study. And after proper analysis the complete plan for your locality and individual conditions should be made by competent authorities. Engineers of the Hydro-Electric Power Commission offer to Hydro municipalities their aid and the knowledge acquired from years of concentrated experience. They will make recommendations that will assure the most satisfactory street illumination for your community. This Hydro service is available without charge.



THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO

HYDRO *News*



"THE TRUE NORTH,
STRONG AND FREE..."



YOU CAN LIVE WITHOUT HYDRO *but..*

Can you remember when making toast meant holding bread over red hot coals? ... and wash day meant hours of rubbing on a board? ... and oil lamps had to be cleaned and trimmed every day? Lots of people do remember those days when it took hours of toil to perform tasks that can now be done electrically in a few minutes. In a comparatively short period of time they have seen electricity grow from a small beginning into one of the most important and beneficial services in the world to-day.

To bring the electrical way of living to more and more people, Hydro has harnessed Ontario's great water power resources to provide this Province with an abundant supply of low-cost electricity enjoyed by few places elsewhere in the world. This is largely because citizens of Ontario co-operated to organize and support Hydro, and have built it up

through steadily increased use of its service. Hydro is completely self-supporting. It operates on a service-at-cost basis, and the more it is used the less it costs.

Here is how Hydro rates have dropped with increased use:

Year	Average Annual domestic use	Average cost per kilowatt-hour
1914..	270 kilowatt-hours..	5¢
1924..	960 " " ..	1.9¢
1934..	1716 " " ..	1.5¢
1943..	2220 " " ..	1.19¢

As you plan your post-war home remember that you will want more and more electrical comforts. When you build or remodel, be sure that your home is wired adequately, with plenty of wall and other outlets in every room. Plan wisely now to take full advantage of this Hydro of yours.

THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO



THE HYDRO - ELECTRIC POWER COMMISSION OF ONTARIO

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The Front Cover



THAT spirit of nomadic freedom which seems to be synonymous with Ontario's vast northern hinterland finds expression in this month's front cover illustration entitled "The True North, Strong And Free."

This particular photograph, typifying the rugged splendour of the north country, shows a section of the Missinaibi river which is a potential source of Hydro power.

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Number 6

CONTENTS

	Page
Lights Of London - - - - -	2
Page Three - - - - -	3
Lots Of "Pluck" - - - - -	4
Chapter On Chatham - - - - -	7
War Birds - - - - -	11
Power Plants In Norway And Sweden - - - - -	14-15
Harnessing Horsepower - - - - -	16
Prophecy In Bronze - - - - -	19
Come Into The Garden - - - - -	21
Hydro Home Forum - - - - -	23
Around The Hydro Circuit - - - - -	24
Lighter Lines - - - - -	26
Downwards Puzzle - - - - -	27
Monthly Load Summary - - - - -	27
Municipal Loads - - - - -	28





Lights of London

on Big Ben

DOWN through the years, Big Ben has been one of the great, symbolic voices of Empire. Deep, deliberate and ever-dependable, it has intoned round the world, bringing resolute and timely reassurance that the "Mother Of The Free" still stands fast.

It is, therefore, fitting, as the lights of London go on again after five long years of blackout and blitz, that the stately Victoria Tower, which is the home of Big Ben, should hold the spotlight.

It is just over 100 years ago—in 1844 to be exact—when the British Parliament commissioned Charles Barry, architect of the Houses of Parliament, to build a clock. Work was started in 1852, and in 1858 the main bell, weighing approximately 14 tons, was cast. This bell was named after Sir Benjamin Hall, then Commissioner of Works, and a man of great stature. Eventually, Big Ben became the accepted name of the clock, officially known as "The Great Clock of the Palace of Westminster," and the passing of time has endowed this world-famous landmark with the majesty and nobility of British tradition.

On May 31, 1859—86 years ago—Big Ben started his almost uninterrupted career, and on December 31, 1923, his voice was first heard over the wireless or radio.

His face, of opalescent glass, is 22 feet in diameter, while a background is provided by a white wall 5 feet from the glass. The gun metal hour hand is 9 feet long, and the minute hand, of hollow copper tubes, is 14 feet long, while the dial letters are 2 feet high. A 3 horsepower motor is used for winding which, before 1913, was a manual operation.

"Bray Burners" provided illumination for the clock up to 1900 when incandescent burners were introduced and used for five years. Next, electric lighting was installed.

Big Ben's future outlook in the matter of lighting is even brighter, for London's post-war plans include the installation of fluorescent lighting.

As the final step in this piece, it might be mentioned that there are 250 steps up to the clock chamber.

* Page Three *

JUNE

WHEN J. R. Lowell wrote "And what is so rare as a day in June?" he was probably inspired by the kind of days which have been truly "rare" of late.

This year, Nature has been in a capricious mood, and her vagaries have been causing no little concern among lovers of the outdoors. June is traditionally a happy month for it beckons the student from his studies, the gardener to rediscover the magic of life and beauty in his own backyard and the sportsman to his game.

Down through the years it has become known as the appointed time for the rose bud to open, and as a season chosen by many a maid for the start of life's greatest adventure.

While June will probably retain these and many other happy associations, it will also perpetuate one of the great dates in the history of man's fight for liberty and the pursuit of happiness. A year has now elapsed since the Allies made their memorable assault upon the outer bastions of Hitler's "Impregnable West Wall," and this June the German people are learning that the way of the international as well as the individual transgressor is hard.

All free men are now united in the fervent hope that by next June the war against Japan will have been brought to a close and that enduring peace will then come to this troubled world.

★ ★ ★

SACRIFICES STILL NEEDED

IN the achievement of victory in Europe Canada has played a prominent part. During more than five years of war this country's effort has been tireless and unremitting: But now that our chief foe lies prostrate there is a natural tendency to ease off and to grow restive under the restrictions which are still in effect.

A warning against a disposition to regard ourselves as already out of the wood and on the eve of an immediate return to normal peace-time conditions has been sounded by the Wartime Prices and Trade Board, and the

co-operation of Hydro News and other personnel publications has been enlisted to clarify the situation for their readers.

In the first place, the war is not yet over, and until Japan has been as decisively crushed as Germany, there can be no enduring peace in the world. True, mounting victories for Allied arms in the Pacific would indicate that hostilities in that vast quarter of the globe may be over before the end of the year. To effect this happy result, however, the Japanese may well have to be as thoroughly beaten on the land as on the sea and in the air. This will call for a great concentration of the Allied might. The war priorities on many vital materials may have to be continued for some time, although minor relaxations may be possible here and there. Canadians are also warned that there are likely to be shortages of many consumer goods and of certain foodstuffs for an indefinite period.

As a nation within the British Empire, and as part and parcel of that fraternity of nations which must be created if we are going to avoid further catastrophic conflict, Canada is pledged to assist in every way possible the re-establishment of liberated Europe. This, viewed from even a selfish national point of view, is just common sense. A shattered and poverty-stricken Europe with which we were unable to transact any sound business would certainly not be to Canada's advantage in any respect.

In order that they may be able to accomplish the task incumbent upon them, Canadians must still be prepared to put up with a few minor inconveniences, which it is the announced intention of the government to ameliorate as conditions permit. Citizens must also be prepared to help, whenever possible, in the production of those materials and goods which are necessary for relief abroad and for the full vigour of life at home.

One of the chief contributions Canada intends to make to war-starved Europe is food. It is obvious, therefore, that the farmer will require every possible assistance in the production and harvesting of his crops. Today there is a dearth of manpower on most of our farms. It is a patriotic duty, and no great hardship for those who have the time, to give the farmer a hand. Financially, and in respect to health, it will be a benefit to themselves as well as to the country they serve.



"SOME CHICKEN, some neck" is a phrase which might aptly describe each of the two fine specimens exhibited by this young fellow. Both birds, however, have lost their fine feathers for they have been through the electric plucking machine.

C. E. MAYNARD, (left) owner of the picking plant, shows what the rubber "fingers" look like before they are assembled in the revolving drums. These fingers are approximately five inches in length and have the appearance of corrugated tubing. They form an important part of the electric plucking machine, and do the job of defeathering chickens without bruising them in any way.

IN THE vocabulary of sergeant-majors and other forthright individuals, "pluck" has a significance which can be more tersely expressed by a familiar four-letter word.

So far as C. E. Maynard of Schomberg is concerned, however, "pluck" is a word that is associated with an electric machine which defeathers chickens.

This machine which, in part, is Mr. Maynard's "brain child," is operated at his poultry plant where up to 6,000 birds a day can be plucked by whirling rubber fingers.

In designing this equipment, which uses about 11 horsepower supplied direct by the H.E.P.C., through the Bond Lake rural power district, he took a more or less standard plucking machine and incorporated many of his own ideas and improvements. So far as can be ascertained, Mr. Maynard is the first man in Ontario to use this type of machine for plucking poultry.

The place where this equipment is in operation has a modern poultry picking plant comprising receiving, plucking, inspection and grading rooms along with cold storage space.

When a shipment arrives, the loudly-protesting birds are removed from the crates and hung on frames attached to a slowly moving conveyor, energized by electricity. As they move along the assembly line, a "killer" pierces the chicken through the brain, cutting the jugular vein and loosening the feathers. (This, by the way, is considered a very humane way of killing poultry.) The conveyor then carries the chickens into a tank of hot water. Thermostatic control of the water ensures correct temperature for proper scalding without bruising or damaging the bird in any way. A propeller keeps the water moving at terrific speed to make sure that the water penetrates to the base of the feathers.

Feathers Fly

The chickens are then ready for the automatic electric plucking machine. Then the feathers really fly! The



THIS DRUM really rolls! It is used to make doubly sure that the chicken has made a clean breast of everything. In other words, this revolving electric drum removes any stray feathers which may remain after a bird has been through the plucking machine.



AS EACH chicken is removed from the conveyor it is ducked into cold water to tone up the flesh. Next, the birds are placed on a rack which is wheeled into a large refrigerator where they await shipment to the market. Some of these Ontario chickens are ultimately served on dinner tables in many parts of the United States.

IT LOOKS as if one of these chickens (right) will be missing from the shipment, for Johnny, with the air of a connoisseur, is doing some meditating. Possibly, his ideas concern Sunday's dinner.



SIXTEEN TONS of choice meal are supplied every year to an Ontario baby food company by the Schomberg dehydrating alfalfa plant (left). Mr. Maynard divides his time between this plant and his chicken business.



A "KILLER" in action (top left). His technique, which is considered very humane, involves piercing the chicken's brain, cutting the jugular vein and thus causing the feathers to loosen.

WHILE THE bird knows nothing about it (top right), things really warm up when the assembly line reaches the tank of hot water in which it is immersed to help loosen the feathers.

AND NOW the feathers begin to fly! (lower left). The job is done quickly and efficiently by the electric plucking machine whose two drums are equipped with over 200 rubber "fingers." This machine, it is claimed, can do the work of forty men.



a revolving electric drum, somewhat like a buffing process, just to make doubly sure that the chicken makes a "clean breast of it."

Another assembly line operator removes the bird from the conveyor and "ducks" it into a cold bath, after which it is placed on a rack. As each rack is filled, it is wheeled into the refrigerated storage room where the birds await shipment, which might be anywhere in Ontario or certain sections of the United States.

Ships From Coast To Coast

When interviewing Mr. Maynard, the owner of this plant, and it had to be done quickly because he doesn't stay long in one spot, he explained to Hydro News that he had constructed and shipped equipment, similar to that used in the Schomberg plant, from coast to coast. "Of course," he added with a chuckle, "all such equipment installed in Ontario has to bear the approval stamp of the H.E.P.C."

Mr. Maynard also explained that he uses Hydro energy, about 160 horsepower, for his Schomberg dehydrating alfalfa plant which, he said, supplies a leading Ontario baby food firm with sixteen tons of choice meal annually. This meal is obtained from alfalfa hay and is used in the preparation of pablum.

Another company, owned and operated in Schomberg by the energetic and genial Mr. Maynard, is a refrigerating and egg grading plant, which uses approximately 15 horsepower.

machine consists of two drums with over 200 rubber "fingers" each. These fingers are approximately five inches in length and have the appearance of corrugated tubing. The plucking of the feathers is accomplished, not by suction, but by the drums revolving quickly, thereby rubbing the fingers together, and at the same time, moving up and down as the bird passes between them. It is estimated that these automatic rubber fingers do the work of forty men. It is an amazing sight to see the chickens coming out of the plucker, sans feathers and carrying no tell-tale bruises.

An inspector checks each bird as it comes from the plucking machine and puts it through its paces again on

CHAPTER ON CHATHAM



AN INTERESTING view of Chatham's King street, looking west.

SOMETIMES called "The Banana Belt of Canada," Chatham, Ontario, is a flourishing agricultural and industrial centre which has been served by Hydro since 1914.

Located in practically the same latitude as Nice, France, it enjoys a pleasant climate which is materially influenced by the proximity of three of the Great Lakes—Huron on the north, St. Clair on the west, and Erie on the south.

During a recent visit to this friendly and enterprising city, Hydro News learned that it was named after Chatham in England, a famous shipbuilding centre, by John Graves Simcoe, first Lieutenant-Governor of Ontario. Records show that in the year 1794, the Governor of Upper Canada established a shipyard on the present site of Chatham and that several gunboats were built there at that time. A year later the land was surveyed and received its name. Now known as the seat of Kent County, Chatham was incorporated as a village in 1850, a town in 1855 and a city in 1895.

Today as one looks at this progressive area, which has materially benefited from the use of low-cost Hydro power, it seems incredible that at the dawn of the nineteenth century this county was an unbroken wilderness inhabited by roaming bands of Indians who pursued the then plentiful game through trackless forest. Located at the junction of the river Thames and McGregor's Creek, Chatham became established, early in its history, as a trading centre, and later developed into a terminus for a number of navigation lines over the Great Lakes to the seaboard. Its central location has undoubtedly been a major factor in its steady progress, until at the present time, Chatham boasts that its debenture debt is the lowest per capita in Canada.

When Hydro came to Chatham in 1914, the members of the first commission were: R. L. Brackin, chairman, and T. A. Smith and mayor John McCorvie, commissioners. The first power contract called for a maximum of 500



THERE IS always a friendly atmosphere at the Chatham Public Utilities Commission (upper left) and many a passer-by drops in to pay a visit. The upper right illustration shows a general view of the office and the staff "hard at it." In the lower left is another section of the office where the accounts are paid. The lower right shot is No. 1 substation's panel board.



horsepower. This load has now grown to approximately 8,000 horsepower, distributed over a network of about fifty miles of overhead transmission lines and some seven miles of underground cable. At the present time, the Chatham Public Utilities Commission is serving approximately 4,555 domestic, 790 commercial and 107 industrial users. Before Hydro, the city was served by a private company which generated electric power through the use of natural gas engines. This company was purchased in 1920 by the Chatham P.U.C. and the gas engines were dismantled.

Since the inauguration of Hydro in the Maple City there has been a steady reduction in the cost of service to consumers. In 1914, with an average domestic monthly consumption of 14 kilowatt-hours, the average cost was 5.8

cents per kilowatt-hour. At the present time, the average monthly consumption of domestic consumers is 117 kilowatt-hours, and the average net cost per kilowatt-hour is 1.57 cents.

This progressive city, with a population of approximately 20,000, has a number of industries engaged in the manufacturing of various types of farm products, or with the production of agricultural equipment. For instance, the Canada and Dominion Sugar Company is reported to be one of the largest sugar manufacturers in the Dominion, and the main office and canning factory of Libby, McNeill and Libby Company is located in Chatham. Other factories make commercial trucks; auto and truck springs; axles and parts; bumpers; plastics (extruded); chrome and nickel plating; garage and tool equipment; cast iron furnaces;



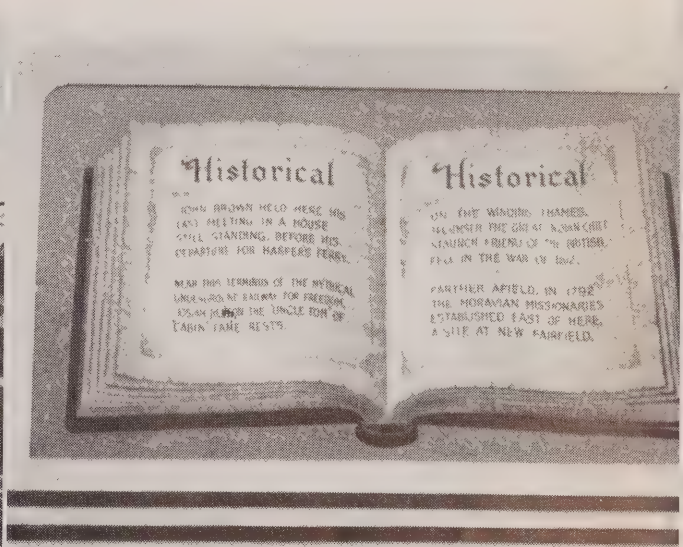
R. S. REYNOLDS, (left) manager and secretary of the Chatham Public Utilities Commission, talks things over with Fred Biette, the chairman.



WILLIAM M. GRAY, commissioner of Chatham's Industrial Service Bureau, finds an electric car very handy during days of gasoline rationing. His dog, "Prince" likes the car too.



CONTROL ROOM of radio station CFCO, which is located on the top floor of the William Pitt Hotel.



CHATHAM POINTS with pride to its historical background, which is a source of interest to visitors.

metal stampings of all kinds; building brick; tile and fire proofing; chemical fertilizer and commercial chemicals; textiles including military clothing and canvas specialties; jute and cotton bags and many others.

Other leading companies, which also use low-cost Hydro power, include: Ontario Steel Products Limited; Taylor Flour Mills; International Harvester Company of Canada Limited; Chrysler Corporation of Canada Limited; American Pad and Textile Company and Chatco Company.

Supposedly the bottom of a once great lake, the surrounding rich and level farm land, which is reported to be more than 80 per cent tillable, contributes very materially to its prosperity. There are approximately 7,000 farms occupying a total of 568,555 acres which yield an abundance of fruits (some tropical), vegetables, sugar beet (Chatham has the distinction of having one of the largest beet sugar factories in the Empire); husking corn, soybeans, fall wheat, and in the more swampy parts, celery and onions. The subtropical climate and rich soil are particularly adapted to

the production of Burley tobacco, and it is estimated that approximately one-half of Ontario's Burley leaf comes from this area.

Many Fine Buildings

Many tropical flowers and plants, such as might be found in the West Indies, are commonplace in Chatham's parks, and it is not unusual for such plants as forsythia shrubs, cherry blossoms and lilac trees to have a second growth as late as December.

The visitor to this community of friendly people cannot fail to be impressed by the many fine homes, buildings, churches, schools, hospitals and parks. And one of the favourite rendezvous for motor boat parties is the fourteen-mile trip up the river Thames to historic Tecumseh Park in the heart of the city.

A good deal could be written about Chatham's historic background, and her many illustrious people, but in this

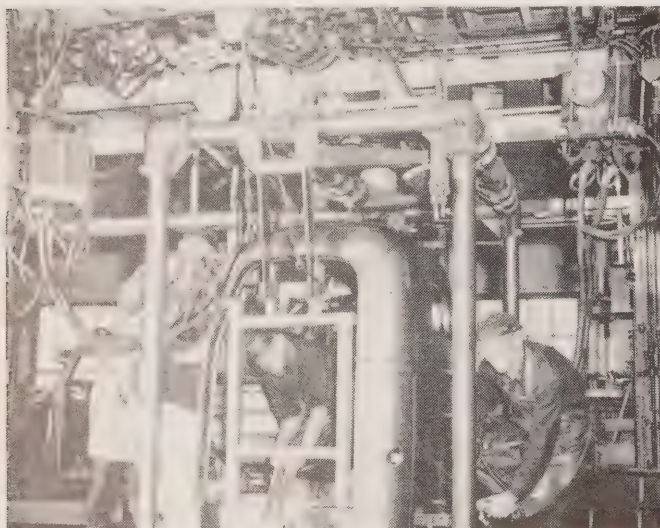
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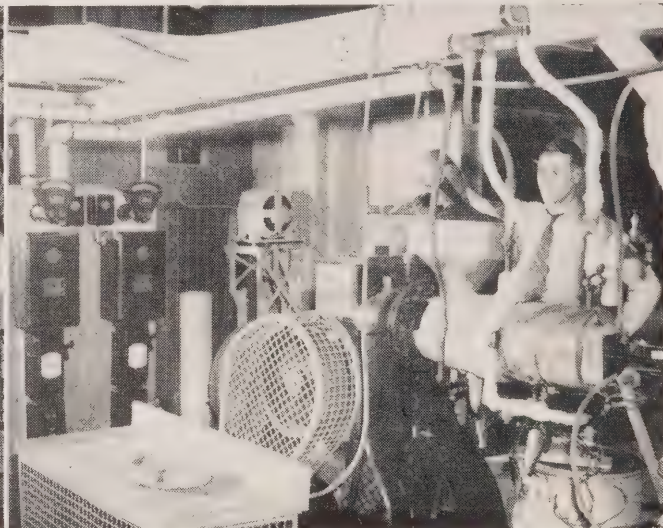
CONSTRUCTION GANG loading the truck are: Ed. Reaum, William Moore, Jack Caldwell, foreman, Bob Andison and Art Moyes.



STOCKKEEPER BILLIE Emans (right) is shown giving Bud Gonyou some repair parts from the well-filled stock room.



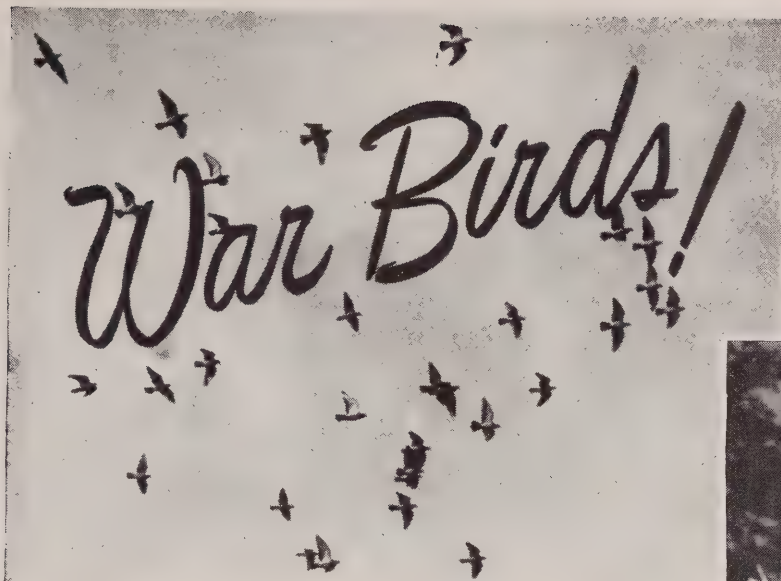
ELECTRICALLY OPERATED spot welders are putting this truck cab together in a hurry at the International Harvester Company, which is one of the largest truck cab manufacturers in Canada. This plant's load averages about 1,100 horsepower.



THIS FELLOW is feeding acetate granules into an electrically operated plastic extruder at Ontario Steel Products. This company manufactures plastic table edging, counter basing, rods and tubing of all sizes and colours.



THIS IS the meter department where large numbers of meters for Chatham and neighbouring communities are cleaned, repaired and made ready for Government inspection. The technicians are, left to right, Jerry McClymont, Frances Jones, Jack Wallace and Frank Switzer.



Left—WAR BIRDS in flight! This formation includes many pigeons that have records of distinguished service to their credit.

Lower—BILL ROBERTS of the Commission staff and "White King" one of his prize pigeons. This handsome snow-white bird is a fast racer and did fine service as a breeder in the R.C.A.F.

PIGEONS came into the life of William Roberts at the age of nine when his father presented him with a brace, and when he left his position in the Commission's filing department two years ago to join the R.C.A.F., forty birds enlisted with him to help win the war.

Mr. Roberts, better known as Bill, is now back at his desk and the pigeons are back in their loft at his home after 22 months' service. During that time Bill and his birds were at the East Canadian coast helping with the special kind of rescue work that pigeons and their trainers have been taught to do.

Among the lesser heroes of this war none are more deserving of mention than the carrier pigeons. Thousands of them have done important war jobs in various branches of the services, risking life and wing to carry vital communications and SOS messages.

When the Canadians raided Dieppe in 1942 the very first news reached headquarters not by wire but on wing. From those bloody beaches two carrier pigeons were released, each carrying a copy of the first operational report from officers in charge of the landing. One of these small messengers fell before the anti-aircraft batteries but the other, refusing to be stopped by the deadly barrage, and with that sureness of instinct known only to his kin, sped to his home loft at an English base, averaging 50 miles an hour for the flight.

Hero Of The Flight

"Peter" is a veteran flier over Europe. On one of his flights over Berlin shrapnel pierced the container Peter was riding in and tore away part of his beak. He behaved like a hero however, and in spite of his wound, continued to "stand by" in case he should be needed. When the crew reached England they gave Peter first aid and then toasted him as the hero of the flight.



Another pigeon, informally known as "Winkie", saved the life of an R.A.F. crew not long ago. The Beaufort in which they were flying crashed in the North Sea. Winkie, freed from his container, got his bearings and then set off for his home loft in Scotland. When he arrived, having braved a stiff gale all the way, his trainer learned from the tag what plane he had been on and figured from his "cruising speed" the approximate position of the wrecked plane. The reconnaissance aircraft easily found the survivors.

The only female flying in the Royal Australian Air Force in the United Kingdom is Squadron Leader Snow White. Her story was told recently by the B.B.C. This frivolously-named flier was awarded the Distinguished Flying Cross by her own crew after a trip over Berlin. She also has been to Hamburg, the Ruhr and the northern Italian

cities, and has conducted herself with courage and efficiency as befits a lady in the services. She has a daughter serving too, coming up through the ranks!

Regular Members Of The Crews

Mr. Roberts says that the R.C.A.F. have extensive lofts on both the east and west coasts of Canada. The pigeons form regular members of the crews on all operational flights, that is coast patrol and so on. When the radio fails or its use might give information to the enemy, then the pigeon comes into his own and must be relied on to carry the message. If the plane is in difficulty, the pigeon is freed from his metal carrier and at once flies to his home base. The pigeon's tag will give enough information for the home base to send out search planes, although if possible one of the crew writes more detailed directions and sends it with the pigeon. The fact that the bird arrives home is an immediate indication of trouble for, if the flight is without incident, the pigeon does not leave his carrier and

is returned to his loft by his crew. Both the air crews and the pigeons must be trained to know exactly what to do in case of emergency.

Many of Canada's best loftsmen have been in training in stations on the coasts. Mr. Roberts himself is one of the 50 pigeon fanciers from Toronto who joined the R.C.A.F. (out of approximately 200 in the city). He was at Dartmouth for some time, established a loft in Prince Edward Island and later was training pigeons at Debert, Nova Scotia.

The fundamental principle of pigeon training, Mr. Roberts says, consists in having the pigeons take progressively longer flights back to a home loft. One thousand miles is considered the limit. The air force lofts include hundreds of well-bred racing pigeons and even a number of champions who have joined up to "do their bit." Sometimes several hundred birds are taken out over the sea in a plane and released for practice flights. When released, the pigeons

(Continued on next page)



AS NICE a row of babies as you could find! Born in March, they will start racing this summer and will fly as far as 300 miles before their first birthday.

"BEACHCOMBER," THE feathered hero of Dieppe, (shown left) enjoys a well-earned rest at his base. He is wearing a message capsule on his leg.

CHAPTER ON CHATHAM

(Continued from page 9)

brief article it is only possible to give a few of the highlights.

According to statistics, permanent settlement began in this section about 1820, and for several decades Chatham was an important shipbuilding centre, and many of the Great Lakes' famous steamers and sailing ships were launched there. In the same period, this community is said to have been the northern terminus of the mythical "underground railway" by which fugitive negro slaves were allegedly smuggled from the Southern States to freedom. In this connection, it will probably be remembered that John Brown, the celebrated abolitionist, and one of the pioneers in this movement, spent considerable time in what is now called the "John Brown House." In this red brick build-



DURING THE summer months, traffic is heavy on the river Thames and the ships carry various types of commodities including coal and gravel. This river is also a favourite rendezvous for motor boat parties.

ing, which is still standing, a newspaper for negroes was printed in 1858 and '59. Although at one time Chatham had a large coloured population there are now very few negroes living there.

Another point of interest in this vicinity is "Uncle Tom's Grave," which is the resting place of Rev. Josiah Henson, who was admittedly the famous fiction character of Harriet Beecher Stowe's novel, "Uncle Tom's Cabin."

Among the outstanding citizens who claim Chatham as their birthplace are: Arthur Stringer, well known author and poet; the late Senator James Couzens, who was associated with Henry Ford at Detroit, Michigan; and the late James D. Ross, who was superintendent of the Municipal Power System at Seattle, Washington, and an administrator on the Bonneville project.

The Chatham Public Utilities Commission has a staff of thirty-four, and is ably administered by Fred Biette, chairman; Charles Austin and mayor R. D. Steele, commissioners, with R. S. Reynolds as manager and secretary.

PRESENT MEDALS TO HYDRO LINEMEN

IN recognition of prompt rescue work by two of their members, the Eugenia district line crew of the H.E.P.C. have been awarded the coveted resuscitation medal of the Canadian Electrical Association. The men cited are W. H. McArthur of the Tara patrol and Anton Ingard of the Shelburne patrol.

At Orangeville on October 6, 1944, R. D. Partridge, one of the Commission's linemen, while working near the top of a pole, suffered severe electric shock and burns from a 22 kv. circuit. When reached by McArthur and Ingard, Partridge was unconscious and breathing had ceased. The two patrolmen immediately started resuscitation and continued until normal breathing had been restored.

Presentation of the awards was made by Wills Mac-lachlan, chairman of the accident prevention committee of the Canadian Electrical Association, in the auditorium of the Markdale skating rink on May 10, Carl Carruthers, station operator at Eugenia, presiding.

In accordance with established practice, the foreman Melville Belfry, received the medal of the association on behalf of the Eugenia Hydro line crew, while Mr. McArthur and Mr. Ingard were given the replicas and certificates.

After the presentations, H. J. Muehleman, head of the operating department of the H.E.P.C., addressed the gathering and commended the two patrolmen for their fine work in resuscitation.

Both recipients of the award received congratulatory letters from Dr. T. H. Hogg, chairman of the Commission.

WAR BIRDS

(Continued from previous page)

bank away to their normal flying altitude of about 700 feet, then find their bearings and head for home. What it is that makes the pigeon head for home is something that the experts have been arguing about for a long time. However, it seems that he is unusually sensitive to radio electric activity and, in some way, relates his reactions from area to area and so finds his way home by "feel."

The homing pigeon is by no means just ordinary pigeon, but a type that has been carefully bred over the last two hundred years. The present "streamlined" flier is a real professional. Partly accounting for his speed is the fact that in flight air bubbles accumulate in his blood and bones making him lighter as he goes along. A transparent inner eyelid protects his eyes from the wind and in rainy weather he can waterproof himself with his own powder. It is not unusual for the air force birds to cover some 400 miles in ten hours. With a tail wind a fast pigeon can make up to 75 miles an hour. These war birds, as well as learning the new rescue work with planes, have learned a few other new tricks that would surprise an older generation of pigeons. For example, although strictly against pigeon habits, one group of birds have been taught to fly at night when necessary.

The homing pigeons, Mr. Roberts told Hydro News, have conducted themselves in this war with gallantry and skill, and have many times given their lives to save the lives of our own airmen.



LIKE ONTARIO, Norway and Sweden have made great progress in the development of their water power resources in recent years. Typical Scandinavian power plants are those illustrated on these pages.

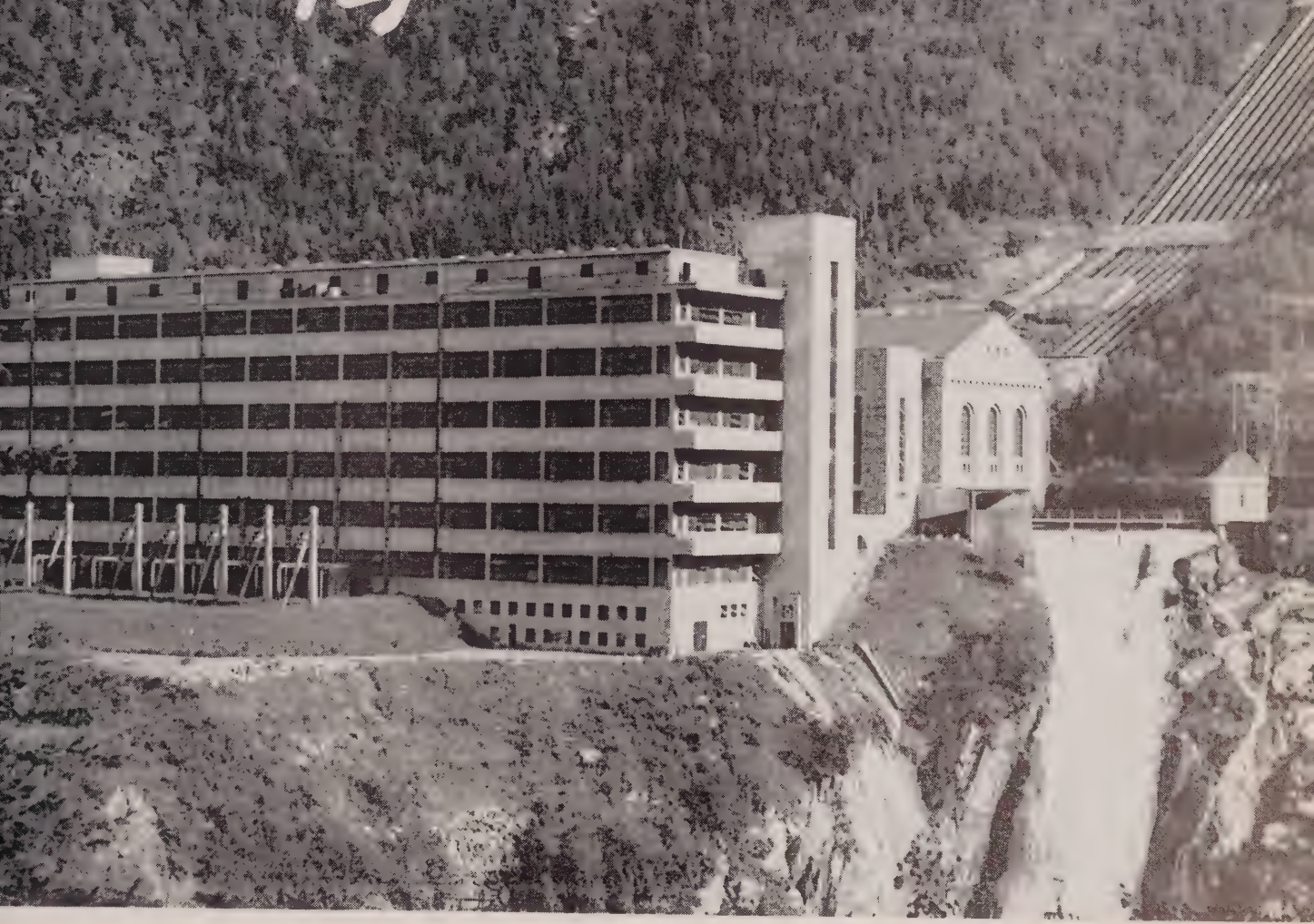
The Swedish plant (shown above) is located at Trollhättan in the district of Elfsborg, forty-five miles north-east of the great port of Gothenburg. Here the Göta river descends 108 feet in the course of less than a mile. Beginning with the Toppö, which is 42 feet in height, there are six falls and several rapids. While the scenic setting of the falls is not particularly striking, they present an imposing spectacle because of the great volume of water which rushes over their brinks.

This volume has been calculated at 18,000 cubic feet per second.

The Trollhättan generating station is equipped with twelve or thirteen units, each of about 16,850 horsepower capacity. They operate at 187.5 r.m.p., which is the same speed as Hydro's Queenston units. The head on the plant is 100 feet, and the total installed capacity, at last reports, was 200,000 horsepower.

Trollhättan supplies not only rolling mills, cellulose factories and other works in the immediate neighborhood but also many of the industries of Gothenburg and other Swedish towns with electrical energy.

Rjukan



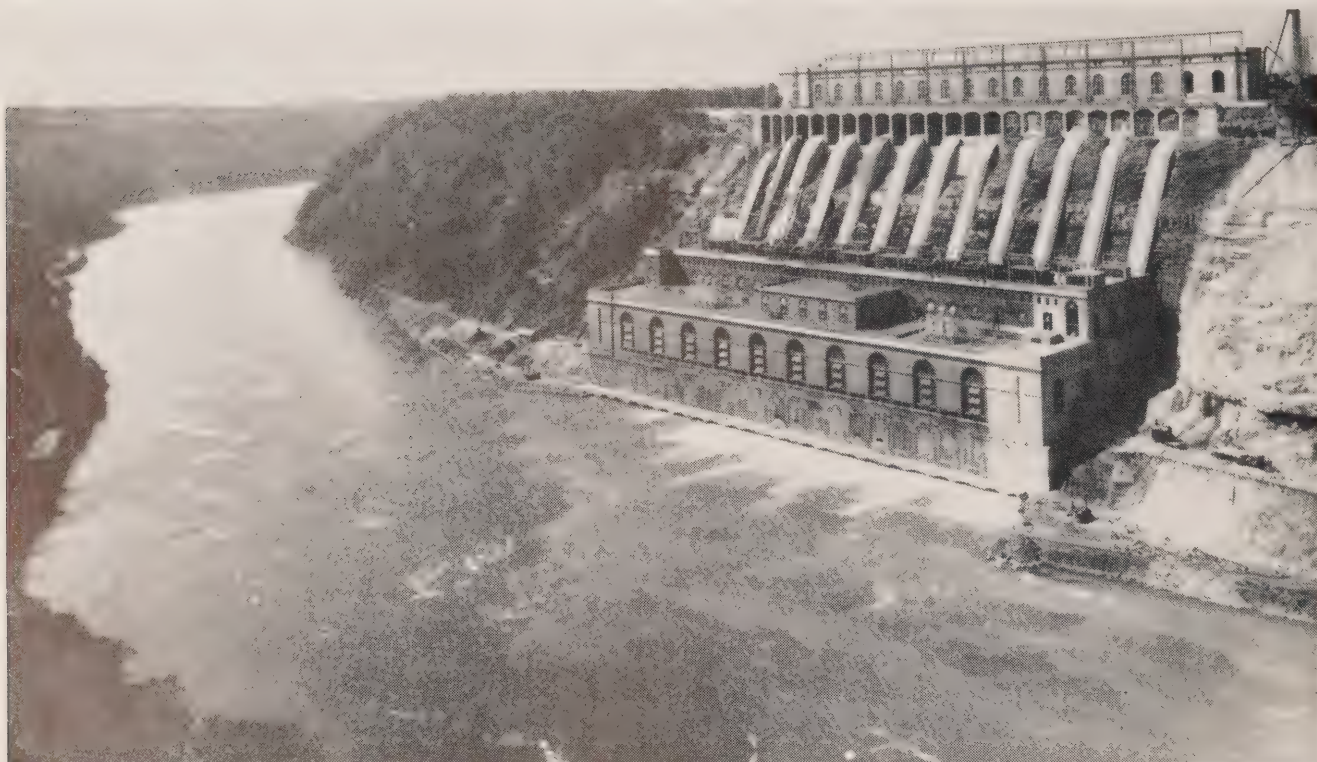
SITUATED IN the beautiful mountain country of the Telemark, the power plants at Rjukan have one of the most picturesque settings in Norway. Not far away is the famous Gaustafjeld, towering to a height of 6,200 feet. Lakes Nordjö and Bandaksuand reflect field and sky in their ever-changing nuances of light and shade, while close at hand the Rjukanfos, one of the finest waterfalls in all Europe, descends 415 feet in mist-shrouded cascades.

There are two installations at Rjukan, one of which is shown on this page, and the water is brought down in pipelines or enclosed flumes to the turbines from heads of 900 feet and 850 feet respectively.

A variation from Ontario Hydro turbine units is found in water wheels of the impulse type with which both the installations at Rjukan are equipped. This type of water wheel is adapted to very high heads. Considerable experimental work was carried out in the design of the units at Rjukan which has greatly improved their efficiency.

The two power plants at Rjukan have a combined capacity of 172,500 horsepower. They furnish electricity to many large industries including the nitre and salt-petre works in the growing town of Notodden nearly 100 miles distant.

HARNESSING HORSEPOWER



A FAMILIAR landmark at Niagara Falls is Hydro's Queenston-Chippawa development shown above.

ELECTRICAL TESTS AT THE SITE

By G. D. FLOYD

Electrical Engineering Department, H.E.P.C.

GENERATING units in a Hydro-Electric power plant are primarily designed to secure the greatest possible output of power from the available water supply. The testing of electrical and hydraulic elements is, therefore, a necessary and highly important task before any new station can be placed in actual commercial operation. All equipment must conform to the Commission's plans and specifications and must measure up to the guarantees stipulated in the purchase contracts.

Both turbine and generator equipment are subjected to exhaustive tests. The present article will be confined to those performed with respect to electrical elements.

Even while the construction of the plant is proceeding a certain amount of electrical testing is required. This is necessary both in generating and step-down transformer stations, chiefly to check the continuity of circuits, and to prove that the actual wiring to transformers, meters, relays and circuit breakers is in agreement with the drawings prepared when the station design was made. Even in a station of moderate size, there are a great many electric circuits all

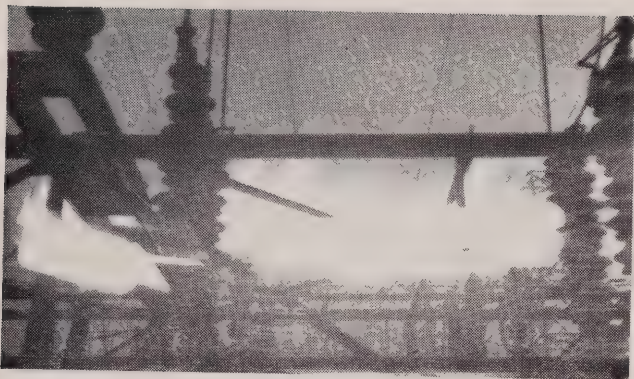
THIS is the ninth in a series of articles which outline step-by-step, the work involved in the building of a power plant from the time a site is selected until the electricity is available in homes and factories that may be located hundreds of miles away.—The Editor.

of which must be correctly connected. Provision of automatic control and the various relay protections needed on an intricate network all require complicated wiring, which has to be checked, if the wiring is done on the site, before it can be assumed that the station will function as intended.

Testing Generator Windings

When a generating unit has been erected, it is first necessary to dry out the windings, as presence of moisture accumulated during erection lowers the insulation strength to the point where failure may occur if normal voltage is applied to the machine. The stator winding is usually dried out by short circuiting the terminals of the generator and raising the field current until full load current is flowing in the stator winding. This current produces heat in the conductors, due to the resistance of the copper, and moisture is driven out of the coils and carried away by the ventilating air.

Megger readings are taken during the dry-out, which are an indication of the resistance of the insulation and



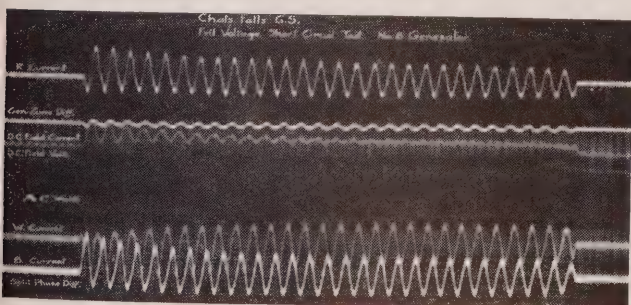
A THREE phase short circuit test to check the protective relays provided to disconnect faulty high voltage lines. The test shown is at 230,000 volts.

indirectly, of its moisture content. When this resistance is considered high enough, an insulation test of twice the normal voltage of the generator is applied between each phase of the winding and ground. If the insulation does not fail upon application of the over-voltage, the winding is considered ready for service.

Voltage Tests

Voltage is then built up on the generator by applying field current, and tests made to determine voltage balance in the three phases, correctness of phase rotation, and proper functioning of exciters and of voltage regulator. The generator is then ready to be synchronized with the system and to carry load. It must be watched carefully during its initial operation for many possible troubles requiring correction, such as overheating of bearings or windings, sparking of brushes on exciters, and abnormal vibration due to poor balance of the rotating parts. The proper functioning of protective relays should be carefully checked, and behaviour of the unit generally closely supervised.

Generators, like their prime mover, the turbine, are purchased to a specification, which requires that the machine shall meet certain conditions which are set out in the contract covering the purchase of the unit. The manufacturer guarantees the efficiency of the generator to be equal to or better than a certain value at various loads. He also



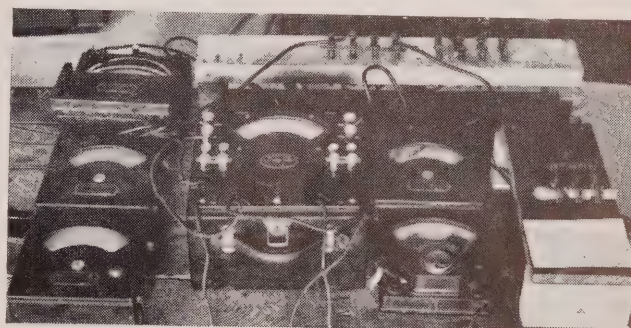
OSCILLOGRAPHS ACCURATELY record the values of rapidly changing current during "sudden" short circuit field tests of generators.

guarantees that the temperature rise of any part of the windings and iron core above the temperature of the cooling air will not be higher than that permitted by the specification. Tests are made, where conditions will permit, to prove whether or not such guarantees have been met. These tests are made by the manufacturer, under supervision of the Commission's Testing and Inspection Department.

Determining Efficiency

To determine efficiency, which is the ratio of the output delivered by the generator to the power delivered to the shaft by the turbine, it is necessary to measure the losses of the machine. It is beyond the scope of this article to give details of how measurements are made. It will be evident, however, that by measuring the losses separately and totaling them, an extremely accurate method of measuring efficiency is available. The importance of obtaining the efficiency guaranteed, upon which estimates of revenue may be based, will be appreciated when it is realized that every additional kilowatt required to supply the generator losses is the equivalent of the revenue that can be obtained from a kilowatt generated and sold.

The thermal test, or what is known colloquially as the "heat run" is made on the generator, by loading it (usually



THESE PRECISION instruments consist of an ammeter, a watt meter and a volt meter. They are set up to measure the generator output.

on system load, where this is available) to rated load, voltage, and power factor. The load is maintained constant until all parts on which temperature indicators are placed, have attained a constant temperature. The temperature of in-going ventilating air is also measured. The difference in temperature between the in-going air and the temperature of any part is the temperature rise of that part. This is compared with the guarantee to ascertain if the latter has been met. The importance of temperature rise on the windings in particular lies in the fact that the materials, which insulate the conductors of the winding, are made of substances such as cotton, silk, varnish and paper, which can be wholly or partially destroyed by excessive heat.

Field Tests on Large Generators

When the generator is a large unit of new design, it frequently happens that its components have to be assembled on the site. In this case, the only opportunity the designer has to prove the suitability and adequacy of his design—

HARNESSING HORSEPOWER

(Continued from last page)

unless he is content to wait until commercial operation has disclosed a defect—is by a field test.

The “sudden” short circuit test is a field test of this nature. The test is made by closing a circuit breaker on a three phase metallic short circuit at the terminals of the generator, the latter operating at rated voltage and speed. A current of three to four times full load current flows momentarily in the windings. Magnetic forces between coils caused by the large currents tend to distort the coils, and this tendency must be prevented with bracing blocks of wood lashed to the coils. The adequacy of the bracing, among other things, is determined by the test. Due to the short duration of this test, the current and other pertinent data are recorded on an oscillograph, as an ammeter could not record correctly the values of rapidly changing current. One of the illustrations accompanying this article shows the oscillograph record obtained on a short circuit test made at rated voltage on a generator rated 23,500 Kva., 13,200 volts.

A number of other routine tests are made on the generators, either at the time the unit goes into service, or often at a more convenient time, if the load delivered by the unit is required to satisfy system demands, as is very frequently the case.

These and other routine tests establish the performance of the generator under any condition of load and voltage, and a data sheet showing results of all tests on the generator, together with weights of various parts, provides extremely useful information to answer quickly any technical point regarding the performance of the unit.

Tests other than routine are frequently made on a generator both immediately after erection and during its life. They are varied in character and may be made to obtain design data, or to determine if the unit can be operated under other than normal conditions without danger.

System Short Circuit Tests to Check Relays

The new generating station is connected to the system over high voltage lines. Dependability of service from the plant requires that the lines be well insulated to reduce flash-over of the insulators to an economic minimum. In the case of an occasional fault occurring, protective relays are provided in the plant, which will open the circuit breakers on the faulty line, and take it out of service. To test the correctness of design of the relay protection, and the accuracy of the settings of the relays themselves, faults are often produced deliberately on the lines as a test to prove the ability of relays associated with the faulted line to disconnect that line. This test also determines the ability of relays associated with unfaulted lines and busses of the network to remain inoperative. This latter function of a relay is of equal importance to its ability to isolate a faulty circuit promptly.

One of the accompanying illustrations shows such a fault on a 230,000 volt bus initiated by placing a length of 2 ampere fuse wire, supported on torpedo twine, across the three phases of the bus, and energizing the bus at its normal voltage of 230 kv. The fault was cleared in two-



This letter, which speaks for itself, was written by Edward Kelley of Willowdale, Ontario.—The Editor.

The Editor, Hydro News.

Sir: The articles published in The Hydro News concerning Hydro officials and their achievements have been so consistently good that it seems fitting a complimentary remark be made concerning the efficiency and devotion to duty of the numbers of men who are employed in the various branches of Hydro service.

With the idea in mind that all people who accept service from the Hydro may better understand and appreciate the men who are constantly on duty, keeping the lights on and the wheels of industry turning, the following crude lines are submitted as a tribute:

THE HYDRO MAN

*A handy workman is the Hydro man;
He does his job as well as experts can.
At digging holes he must be rated tops;
He n'er looks up, nor hesitates, nor stops;
And poles so crooked that their ends near meet
He lines them up like houses on a street.
To keep things going is his fervent creed,
He thinks at night of all the tools he'll need,
So in the morning, armed with everything,
He sallies forth, like hawk upon the wing,
And climbs tall poles, the wiring to repair,
The toughest problems are his daily fare.*

*He knows the safety rules from A to Z,
Resuscitation's written in his head;
Electric shock or drowning—all's the same—
He brings the victim round, while folks exclaim:
"These Hydro men, they sure are versatile,
And at their work they're smiling all the while."
And when lights flicker, sometimes, perhaps, go out,
Consumers never murmur, never shout,
For well they know that man out on the line
Will soon have power and lighting working fine.*

tenth seconds by the relay protection associated with the faulty bus which tripped all circuit breakers capable of carrying fault current into the fault. The speed of clearance was such that although a heavy arc occurred when the light capacity fuse wire melted, the twine supporting the fuse was not even scorched!

These tests are usually initiated by the electrical engineering department and are made by the testing and inspection department, with the co-operation of the operating department.

Proper precautions must be taken, of course, in all tests to insure against damage to property and any possible danger to life.

PROPHECY IN BRONZE



THIS RARE coin designed for the Copper Company of Upper Canada in 1794 shows a river god reclining on two hydria or water-pots at the junction of the Ottawa and St. Lawrence rivers. The "trident" is four pronged, suggesting future sovereignty over water power as well as navigation, irrigation and fisheries.

TOWARDS the end of the eighteenth century, a die-sinker and engraver of exceptional ability lived in the city of Birmingham, England. For a time he worked for the old Soho Mint and again for Lutwyche, who turned out token coins to commemorate important national events and the anniversaries of celebrities.

That is about all that is known of Ponthon, the mystery man of numismatic designing. Even his Christian name is forgotten. He might be called the "one-year man" since all his dated work bears the imprint "1794." But across that short space of time his genius blazed like a meteor. Not only are his designs of unusual artistic merit, but they command attention from the point of view of vision and imagination.

River God Depicted

Particularly is this the case with regard to a token coin struck in 1794 for the Copper Company of Upper Canada, the photograph of which is reproduced by Hydro News through the courtesy of its custodian, The Canadian Bank of Commerce. The whole design of this remarkable coin is a prophecy in bronze of the future marvellous development of Ontario through its waterways and water power.

According to the late R. W. McLachlan of Montreal, who ranks among the leading American numismatists, this coin, the earliest minted for Upper Canada, represents the highest flight of Ponthon's genius.

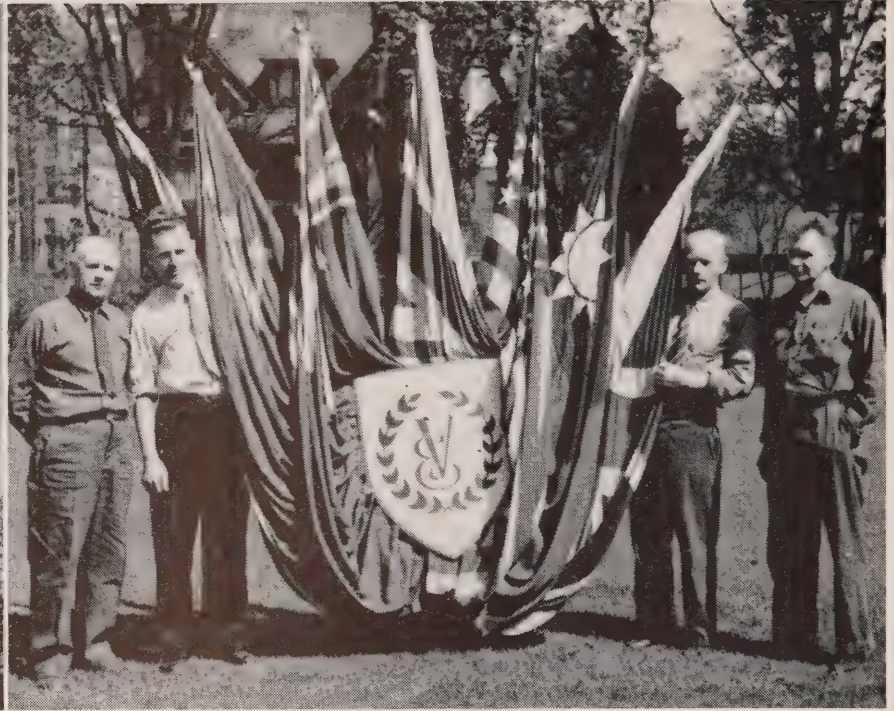
On the obverse face of the token is depicted Neptune, or a river god, reclining at almost full length, with his right arm resting on one hydria or water pot and his left elbow on another. Both hydriae are on their sides with water flowing from their mouths. Behind the recumbent figure, rushes or flags are growing, and there is a landscape in the distance. On the exergual line is the name of the artist.

It is of very special interest to note that the river god is furnished with a four-pronged spear instead of with the traditional trident. Why did Ponthon add that extra tine?

The trident, or three-pronged spear, was the original fishing spear of the early Italians. Naturally, it came to be regarded as the symbol of dominion over lakes and rivers and ultimately the oceans, and was associated in mythology with the sovereignty of Neptune and Poseidon. In more modern times the trident has been associated with Britannia, as the ruler of the waves.

It is fair to deduce from this that Ponthon did not regard the trident as sufficiently expressive of the vision he

(Continued on next page)



MEMORIES OF VE-Day are brought to mind by the above illustration showing the flag-bedecked H.E.P.C. Administration Building on University Avenue, Toronto. These members of the Commission's staff were stopped by the cameraman just as they were about to place the victory shield above the front door of the building. They are, from left to right: William Burnett, Reginald Boustead, Percy Leland and William Lofgren.

PROPHECY IS BRONZE

(Continued from last page)

desired to portray. In some flash of inspiration did it occur to him that the rivers of Ontario would one day be the sources of a new power through the ingenuity of future generations? In some groping way, like a man seeing through a glass darkly, did he realize that thunderous cataract and roaring rapid would be harnessed to the uses of man? It would almost seem so.

Prophetic Inscription

Ponthon may have got his idea of a river god from the figure on a Glasgow token piece of 1791. In the case of this coin, however, there was no trident, only a rudder, indicating that the artist regarded its facilities for shipping and navigation as the only benefits derived from the river Clyde; whereas, as Mr. MacLachlan points out, the extended form of the god on the Canadian token and the four-pointed spear in his hand shows that the St. Lawrence and the Ottawa rivers and their tributaries will extend their benefits not only through their fisheries and their irrigation and navigation facilities but also through their unrivalled water powers to every corner of the province.

The prophetic character of its design is further borne out by the Latin inscription on the Upper Canada coin.

The inscription reads: FERTILITATEM DIVITIAS QUE CIRCUMFERREMUS.

Classical scholars will note that there is one 'r' too

many in the verb "circumferremus." It may be said, in passing, that this may be one of the reasons why this interesting half-penny coin was never circulated as currency. It does not, of course, detract in any way from the artist's vision. The translation, with the amplifications suggested by the design of the coin may be rendered as follows:

"Let us (the St. Lawrence and Ottawa rivers and our tributary streams) bear fertility (as the result of our watering and irrigating facilities) and wealth (produced by the commerce carried on our navigable waters and through the power derived from our waterfalls) all over (the province of Upper Canada)."

Forecast of Prosperity

"With her maddened mouth she reaches a thousand years with her voice by the power of Apollo."

So wrote the Greek philosopher, Heracleitis, of the crazed old sibyl of Marpessus, whose supposedly prophetic oracles were collected by the Romans and kept in the temple of Juppiter Capitolinus to be consulted in times of national emergency.

Ponthon, the designer of the earliest token minted for the Copper Company of Upper Canada spoke with no "maddened" mouth. His intelligent forecast of prosperity through waterways and water power has already been partly realized. But if all the developments planned for the St. Lawrence seaway project are carried out, his visions may well have all the far-reaching range attributed to the sibylline prophecies.



SUMMER CARE

By **Leon Van Cleemput, Chief Horticulturist,**
Dept. of Botany, University of Toronto

IN exact proportion to the time and effort expended, the garden is beginning to yield returns in kind during June. Excessive rains and cold weather in May have naturally retarded the planting and growing of flowers and vegetables, but the warm weather and moisture combined have promoted a quicker growth in recent days.

In the victory gardens, peas, spinach, green onions, radishes, salads and other vegetables should be ready soon. If a regular succession of these greens is to be maintained, however, the pace set during the last month must be kept up. Not only must more plantings be done, but the crops now growing need protection and insurance from insects and disease which are often troublesome in the June garden. Plant lice, beetles, worms, caterpillars will be plentiful as well as blight, rust, mildew and other diseases. So look over your victory garden folder and follow the directions given in the excellent and useful spray chart.

Rotation Important

Fall crops may be assured by replanting, before the end of the month, extra early varieties now on the decline—such as beets, radishes, lettuce and spinach. But rotation is important. Have mid-summer lettuce follow early beets, beans after radishes, beets or celery to follow lettuce, lettuce or beans to follow onions, and late tomatoes after early peas. Extra early varieties of the follow-up crops will often leave the ground available for still another crop in August.

To get more out of your small victory garden, resort to companion cropping. Plant early sweet corn and squash in the same row. The corn ripens and is gone, leaving the squash to develop in the fall. A second crop of lettuce and radishes or some onion sets, all of which develop quickly and are used when young, may be grown between tomatoes.

Crops grown for their leaves (chard, spinach, endive, etc.) will be benefited by nitrogenous fertilizers. Give top dressing of nitrate of soda either immediately following a rain or on ground thoroughly saturated the night previous. Liquid manure is best however. Half fill a bag with manure, and suspend in a barrel of water. Colour should be like weak tea when applying.

Before the middle of the month sow winter celery. Any sown last month may be pricked off into a spent hot-

bed as soon as large enough to handle. Also transplant to permanent quarters, some time in June, late cauliflowers, cabbage, kale, broccoli and brussels sprouts. As soon as other vegetables are plentiful stop cutting asparagus. If a poor return is inevitable from any crop in the vegetable garden, pull or hoe it out and replant. Don't waste time and space, but start a supply of winter vegetables. It is not too late to sow others for fall use. Early varieties are an advantage in many localities as they mature before frost. Late cabbage, cauliflower, kale, brussels sprouts and celery can be set into permanent quarters this month, and the earlier the better. Continue to pinch out frequently the side shoots or suckers on your staked tomatoes. Keep melon and squash vines off the ground with brush and place small jars or pots under melons to ripen them more evenly. All the cucurbitaceae* should be sprayed regularly with bordeaux mixture. Carrots for winter crop should be sown by the 15th of the month, along with fall lettuce and radish for succession. Black spanish is an excellent radish for winter use. If early potatoes are removed they can still be followed by turnips.

Liquid manure will be very beneficial if applied this month on onions, leeks, cucumbers and melons. In watering be sure to put the water where it belongs. "Leafy vegetables" as well as root crops appreciate having their tops as well as their roots watered. On the other hand, plants that bear fruits (such as peppers, eggplants, tomatoes, cucumbers and other vining plants) should not have the tops and blossoms soaked and the pollen washed away.

In The Flower Garden

It is not too late to plant seeds of quick-maturing annuals in the flower border. They may be the real thing for the annual fall show. Many herbaceous and rockery plants may be propagated after flowering by cuttings or offsets. The creeping phloxes, cerastiums, cedums, aubrietias, arenaria, iberis are among those that may be increased in June. Use a frame containing sandy soil or sand and peat and keep it shaded from hot sun. Stock may be increased also by sowing seeds of perennials at this time. Lupins, foxglove, canterbury bells, dianthus barbatus or sweet williams, aquilegias, oenotheras, heucheras and other perennials will make plants of sufficient size to plant in permanent quarters in fall or next spring. These young home-grown seedlings make better plants than any divisions bought or received. Besides the nurseries are out of stock of the best varieties due to lack of trained help. By growing

*Members of the cucumber, melon, and squash families.

a few of your own perennials you will get greater pleasure out of it, because they are really yours.

August is the right month for starting perennials from seed, but you will get more vigorous plants if you start them in June.

If not done yet, stake and tie neatly the tall-growing plants that are so often injured by the wind, like dahlias, delphiniums, lilies, hollyhocks, peonies and poppies. Paint the stakes green to make them as inconspicuous as possible. Personally, I favour staking all the annual plants that grow more than a foot high, especially those in formal beds, otherwise the plants are growing together and cultivation becomes impossible. Prune early-flowering shrubs as they pass out of bloom, removing the oldest wood that it may be replaced by young, vigorous shoots for next year's flowers. As for evergreens, pinching the side shoots induces bushiness, while overhead spraying with water daily is beneficial.

Insects Damage Flowers

Though the flower garden is considered different from a vegetable garden, the same directions can be used for spraying and fertilizing the plants. Sucking and biting insects damage the flowers and shrubs as well as the plants in the victory garden. Very often, I see people placing commercial fertilizer or manure in each hole made for planting young annual or perennial plants. This is not advisable as the roots of young plants should never come in direct contact with any fertilizer. If your flower bed is in good working condition, plant your seedlings and wait till the plants are growing before applying any food. From that time on, regular feedings are needed, at least two or three times in a season, to have excellent results.

In July there is a tendency to ease up in the care of the garden. Whether the thought of approaching vacation or the reflex effect of the heat brings this about is of little moment; there is no doubt however, that in July, more than at any other season, the gardener needs inspiration and urging to further effort.

In the flower garden there is more work than we like to do, but watering and cultivating cannot be postponed. Do not stir the soil deeply when cultivating, as many plants are shallow rooted. When watering, continue until the soil is saturated; daily sprinklings should be avoided. A mulching of the flower beds exposed to full sunshine with peat-moss saves a lot of work and will keep the roots moist much longer.

Cut Flowers Freely

Many of your plants will give you an abundance of flowers, so cut them freely for house decoration, especially annuals, and cut off flower heads when bloom fades, unless saving seed.

Iris: Unfavourable weather in May has naturally retarded the flowering season of many perennials and irises are no exception. This may also have some influence on the dividing and transplanting. There seems to be a great difference of opinion as to the proper time to separate iris. Some growers say October and that is when dealers usually send out new stock. But right in July, when there

DAYTIME BLACKOUT

WHEN Toronto had a daytime blackout right at the height of the noon lunch hour on May 21, George Cousins, the Commission's supervising lighting engineer, forgot about lunch and reached for a photometer, an instrument used for measuring light.

He discovered that light intensity was too low to measure on an ordinary meter, which means it was less than half a foot-candle or 1/20,000 of natural sunlight, which on a normal day has an intensity of about 10,000 foot-candles.

Mr. Cousins recalled that during a total eclipse on January 24, 1925, Torontonians had to get along with only 1/100th of a foot-candle for a time, and while on the subject of light and darkness, he pointed out that "the light of the silvery moon" under ideal conditions, can register 1/10th of a foot-candle on a sensitive photometer.

Turning to the weatherman, Hydro News learned that a daytime blackout could be expected once a year, but that it rarely occurred at noon.

F. W. Ball, load engineer of the Toronto Hydro-Electric System, reported that street lights were on for about eighteen minutes at noon on May 21, after which the storm clouds cleared and the sun got the foot-candles back to a normal "ten thousand."

is a lull in work, is a good time to separate crowded roots. The sooner after blossoming time this is accomplished, the better growth will be made and thus so much the greater will be the chance for blossoms next spring. Also, the more effective will be the fight against the iris borer, if this pest has taken up its abode in the large clumps. Carefully and thoroughly cut out every particle of stem showing the least bit of decay and hunt for the pest. They must be forcibly removed and lime applied to the soil and around the roots. Before transplanting iris divisions, give them a good coating of sulphur.

Lilies: Certain lilies that have flowered in June and in the beginning of July can be divided as soon as the tops die down. Here are some with their depth of planting. *Lilium candidum* or madonna lily; depth, 2 inches of soil over bulb. *Lilium croceum*, 3 to 4 inches deep; *lilium regale*, 8 to 10 inches deep; *lilium tenuifolium* or coral lily, 6-7 inches deep; *lilium canadense*, 5 inches deep, and *lilium elegans thunbergianu*, 8 to 9 inches. Dig them up and divide them. Take special care of the small bulblets which can be planted in a nursery bed. Work bonemeal into the ground before the bulbs are replanted and rest each bulb on a two-inch layer of sand for drainage.

Some lilies, like the madonna lily, like a loose soil and lime, while *lilium superbum*, or turkscap lily, likes a moist, peaty soil and no lime. So study the requirements of your lilies, and do not forget that they all respond to good drainage.

Though gardening seems quite hard in the summer months, it is a hobby which gives great happiness. Never do so much that gardening becomes a burden. Double your enjoyment by sharing its secrets and loveliness with others who have similar interests. Take time off to visit one another's gardens as often as you can. Each trip will give you new ideas and a wealth of information.



Hydro HOME FORUM

by *Edithemma Muir*
HOME ECONOMIST

TODAY Europeans have to plan menus from sixty to seventy per cent cereals. Although meats and other proteins, fats and nutritive vegetables are very scarce, the milk consumption has held out remarkably well. U.N.R.R.A. realizes the tremendous amounts of food needed for Europe this year, especially in large cities and stricken areas.

The people of Europe have no unfamiliar food product. Their tables are only different in the way their eatables are combined, cooked and seasoned. Texture, for instance, makes a tremendous difference. Porridge in one country would be an insult; purees in another country would be pushed aside, and salads, as we toss them together, would be tossed to the cattle in some countries.

Before V-E day it was estimated that 170 million people in the war area would have to be fed. This is one of the major problems facing the United Nations. In Canada, 22 million lbs. of vegetables were produced in victory gardens in 1943, and this year the full co-operation of victory gardeners and farmers will enable Canada to play her full part in helping the people of Europe.

* * *

PRESERVE FRUIT: Plan to do the canning job successfully. The most important cause of food spoilage is the action of bacteria, yeasts and moulds. These can be killed by heat. Yeasts and moulds are easier to kill than bacteria and cause less difficulty in canning. Many types of bacteria (in non-acid vegetables) form spores which are difficult to kill. Water-bath or electric oven canning can be used successfully for processing fruits or

tomatoes. Containers should be those that can be sealed air-tight to prevent the entrance of air which carries infection. Glass jars and lids should be free of nicks; tin cans should have even rims. It is necessary to renew wartime rubber rings.

Steps in Canning

(1) Use only clean, fresh, solid fruits and vegetables, in prime condition. "Two hours from garden to the jar" is a good rule. Be sure to pick over products under a good light. Grade for size and same degree of ripeness.

(2) Wash material thoroughly.

(3) Pre-cook for 50 seconds to 3 minutes, depending on size and ripeness.

(4) Pack the material in the sterilized jars or cans, working quickly.

(5) Add boiling syrup or hot fruit juice.

For thin syrup use one cup of sugar to three cups of water. For fruit juice, crush ripe fruit, and double the quantity by adding boiling water.

(6) (a) Wipe off top of jar with a piece of sterilized cheesecloth, place rubbers in position and adjust caps.

(b) Seal tin cans which have been packed hot. If tin cans have been packed with cold fruit, heat or exhaust in a pan of boiling water before sealing.

(7) Process. Heat the product to kill bacteria.

With the water-bath canner, place jars on a rack far enough apart to allow free circulation of water, which is well over the tops of jars.

If you use an electric oven pre-heated to 275 degrees, make sure the top heat has been off for 5 minutes before you put in the jars.

Leave an inch of space around each

jar and place a pan directly below the jars to catch any juice that may boil out of the jars.

(This is a simple and preferred method for those who have this valuable equipment.)

* * *

HINTS FROM HOMEMAKER

When canning, I use a little vinegar in the water in the pressure cooker (about 2 tablespoons to a quart) to prevent discolouration. (G.B.)

* * *

To save dipping and dribbles, I make syrup in my glass percolator. It keeps the liquid hot and prevents evaporation. At the same time, it facilitates the filling of jars. (J.Mc.)

* * *

Use a heavy work glove—the kind you buy in a dime store—to lift jars out of hot water. It protects the hands. (S.R.)

* * *

I've found that if I wash the jars a day in advance there's less confusion in the kitchen on canning day. (B.T.)

* * *

In our hard-water country a tablespoon or two of vinegar added to the water in which jars are sterilized prevents film forming on jar or jelly glasses. (M.F.)

* * *

For scalding tomatoes and peaches, I use the deep well-cooker of my range and the French-fry basket. Once water is boiling, I switch to low heat, fill basket with fruit, scald, peel and repeat until job is done. (Mrs. L.G.)

* * *

To prevent burning, a smooth-surfaced deep kettle should be used when cooking anything containing sugar. (M.M.)

AROUND THE HYDRO CIRCUIT

CHATHAM'S MAYOR

Although this is mayor **RALPH D. STEELE'S** first year on the Chatham Public Utilities Commission, he has had considerable experience in municipal affairs.

From 1934 to 1937 he was a member of the Board of Education, and in 1938 was chairman. From 1940 to 1944 he was an alderman, and in 1945 was elected mayor.

He was born at Bridgeburg in June, 1908. After receiving his B.A. degree from the University of Western Ontario, and his M.A. from the University of Toronto, Mr. Steele attended Osgoode Hall and was called to the Bar.

He is particularly interested in town planning and industrial promotion work, and his hobbies are French and swimming.



CHATHAM'S CHAIRMAN

Serving his nineteenth year on the Chatham Public Utilities Commission, **FRED BIETTE**, chairman, is a well-known figure in Hydro circles, having played a prominent part in furthering the interests of various municipalities throughout the province.

Born at Newcastle, Ontario, in 1866, Mr. Biette was associated with the banking business for over forty years. Coming to the city of Chatham as manager of the Standard Bank in 1916, he took a keen interest in public affairs, particularly in the Board of Trade. He was instrumental in forming the Chatham Golf Club in 1918 and was its first president. He also took an active part in bowling and other sports activities.

Mr. Biette has been serving on the Chatham commission since 1926, having been chairman for a number of years. Several of his terms were by acclamation.

For the past fourteen years he has served on the executive of the Ontario Municipal Electric Association, and is now an honorary vice-president.

Although retired, Mr. Biette has not entirely given up business, being clerk, treasurer, tax collector and assessor of the village of Erie Beach, where he maintains a summer home.

REPORTED MISSING

F/O REGINALD J. W. HALL, R.C.A.F., formerly of the H.E.P.C. electrical engineering department, is reported missing. From July, 1939, until his enlistment in June, 1941, F/O Hall was employed as a field man on transmission line survey work.

COMMISSIONER AT CHATHAM

One of the oldest members of Western Ontario, who is greatly interested in Hydro development, **CHARLES AUSTIN**, commissioner of the Chatham Public Utilities Commission, was born in the Ottawa Valley in the village of Egansville in 1869.

Educated in the town of Perth, Mr. Austin set up a business at Schrieber when it was only a divisional point on the Canadian National Railways. In 1895 he established a general store in Chatham, which later developed into one of the largest mercantile businesses in Western Ontario. He sold out in 1928 to the T. Eaton Company.

Mr. Austin entered municipal life in 1905 as a member of the Chatham city council, and was elected to the chief magistrate's office in 1910. Since 1905 he has been a member of the Kent Children's Aid Society and saw its development into a large County Board which handles mothers' allowances and old age pensions. During the first Great War he was president of the Kent County Patriotic Fund.

Mr. Austin has been on the Chatham Public Utilities Commission since 1936, having been chairman six times. He is also a member of the Ontario Municipal Electric Association executive.

For many years he has taken an active interest in lawn bowling and curling.

Since his retirement from business he has travelled extensively, particularly in China, where his daughter and son-in-law have been missionaries for some time.



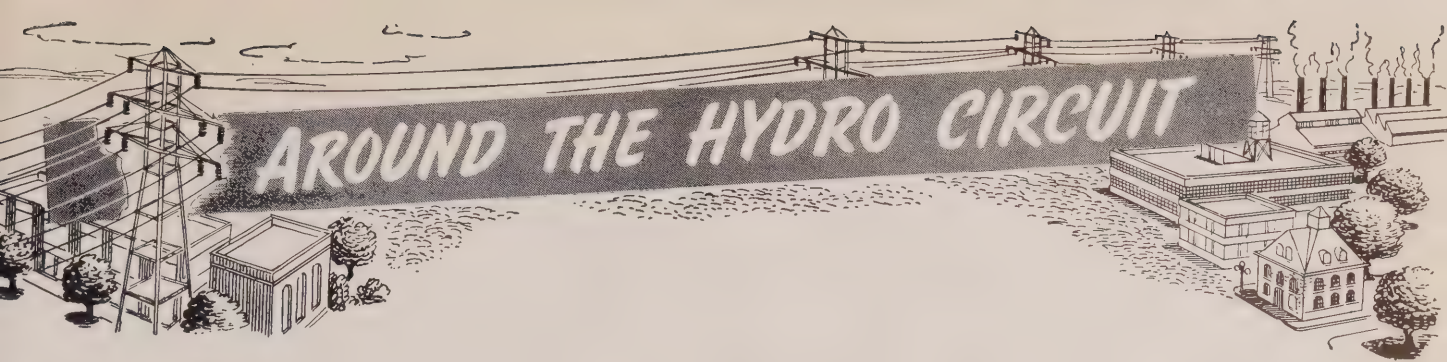
R. M. BOND PASSES

ROBERT MORRIS BOND, for nearly 30 years an employee of The Hydro-Electric Power Commission, died on May 26 at the Toronto General Hospital.

Born in New York City in 1888, he moved to Toronto where he was educated. He entered the accounting department of Hydro in April, 1916, and since 1930, he was head of the municipal audit department.

The funeral was held from Hillcrest Church of Christ, and interment at Park Lawn Cemetery. Surviving are his widow, Nellie Burton Bond of Weston, a son Donald, five sisters and two brothers.





MEET "SMOKY" REYNOLDS

R. S. "SMOKY" REYNOLDS, manager and secretary of the Chatham Public Utilities Commission, has been associated with Hydro since his college days.

Born in Ottawa Valley at Carleton Place in 1902, he attended public and high schools at Carleton Place and Smiths Falls. Later he attended Queen's University, graduating in electrical engineering in 1924, and mechanical engineering in 1925.



On leaving university, he joined the staff of The Hydro-Electric Power Commission of Ontario in the construction department at Port Arthur Bare Point substation. Later he was with the operating department in the Georgian Bay district at Wasdells Falls, Big Chute, Waubesa and Eugenia Falls stations. He also worked on rural

construction in the Dorchester, London and Delaware rural power districts, and in 1927, opened up the Chatham rural office, from which six districts were administered.

In February, 1929, Mr. Reynolds left the H.E.P.C. to take over the duties of manager and engineer of the Chatham Public Utilities Commission, and in 1938 assumed the added duties of secretary.

For many years he has been on the executive of the Association of Municipal Electrical Utilities, and in 1938 was president.

"Smoky" is well known in athletic circles, having played senior rugby at Queen's University on three consecutive Dominion championship teams. He played hockey for eighteen years, and has been a member of the Ontario Hockey Association executive for the past eleven years. He is now taking a keen interest in curling and is past-president of the Chatham Curling Club. The Ottawa Valley has a particular allure for Mr. Reynolds during the hunting season, and he always brings home his quota of deer.

TORONTO HYDRO PLANS

POST-WAR PROGRAMME

A post-war programme, involving an expenditure of six million dollars, will be launched by the Toronto Hydro-Electric System as soon as men and materials become available, it was announced following a recent meeting of the commissioners. This programme, it was stated, does not include a projected million-dollar plan to modernize Toronto's street lighting.

Mayor Saunders intimated that the post-war programme would be spread over a period of three years and that it would represent an expenditure of approximately two million dollars a year.

DOCTOR PRAISES HYDRO MEN FOR EFFICIENT RESCUE WORK

Only the expert first aid work of twelve Kitchener, Galt and Preston Hydro employees revived Gordon Krupp, aged 45, of Kitchener, after he had come in contact with a high tension electric conductor, according to Dr. C. G. Powers of Preston, who attended Krupp, a Hydro employee for the past 23 years.

Krupp was one of several maintenance men who, during a short interruption, were scheduled to replace a 13,200 foot bushing at the Galt R.P.D. distribution sub-station located on the Galt-Hespeler highway. He had apparently commenced work before the equipment had been disconnected and de-energized, and had received an electric shock which rendered him unconscious.

Artificial respiration was commenced immediately and continued over a period of four hours, the men working in relays. Even while Krupp was being transported by Hydro truck to the Galt hospital, there was no relaxation in the efforts of the men to revive him, and after his arrival at the hospital, resuscitation was continued until normal breathing was at last restored.

The men who rendered this efficient first aid were A. J. Douglas, foreman; P. E. Worden, operating department, Preston station maintenance, H.E.P.C.; O. A. Schaefer, E. A. Caldwell, Rudolph Rominger, Preston R.P.D., H.E.P.C.; J. E. Teckoe, Arthur Babcock, Roy Babcock, Stewart Babcock, Galt P.U.C.; F. R. Kreason, E. E. Bricker, Harold Rooke, Preston P.U.C.

KILLED IN ACTION

Word has been received of the death of two Hydro employees, casualties of the European war. One, **THOMAS AUBREY ROGERS**, started with the Commission in 1933 as a floorman at Eugenia. At the time of his enlistment with the R.C.A.F. in 1940, he was employed as district relief operator, Sudbury district. He was reported missing in August, 1944, but official word has now arrived that he lost his life in air operations in June, 1944.

The other employee, **ALFRED RAWNSLEY EDWARDS**, was a lineman in Bala for over three years. He joined the R.C.C.S. in 1940. Cpl. Edwards saw considerable action on the Italian front where he was wounded. He fought in both Germany and Holland and was killed in action in Holland only a few days before Germany's capitulation. In a letter to Cpl. Edwards' widow, Lt.-Col. R. H. Widdifield, his commanding officer, stated that he had previously recommended Cpl. Edwards for the Military Medal for his courage in Italy. "No one ever deserved a decoration more," he said. "It should be to you, a symbol of his gallantry and self-sacrifice."

Lighter Lines

The troops were resting in a shattered German village. The brigadier, who always insisted upon brief and pointed answers to his questions, had unrolled a map and was interrogating the junior officers.

"Now," he asked one of them, "how would you get your men across that river and over that mountain?"

"Dam the river—blast the mountain," was the concise reply.

* * *

An octopus with tentacles four feet long is said to have battled savagely for more than half an hour with two boats off the British Columbia coast. The story may be true, but it is difficult to resist the suspicion that it is just by way of a curtain raiser for a revival of that old pre-war mystery "play"—The Sea Serpent.

* * *

A Toronto newspaper recently recorded a horse race over a distance of "7 miles and 70 yards," which was won in the remarkable time of 1 minute, 47 seconds. With such equine speedsters about, transportation companies may yet have cause to regret that they ever went in for mechanized equipment.



"Am I on the bus or still waiting for it?"



"Are you gonna marry Sis? I heard her say she'd give five dollars to know—and I could use the money!"

An American sergeant quartered far from war's alarms on lovely Norfolk island in the south Pacific states that he is prepared to give up this earthly paradise for the thrill of an Indiana snow storm. Word may now be expected from one of our boys in sunny Australia expressive of his regret at missing our 1945 spring.

* * *

The master of the house strode furiously into the living room.

"Who told you to put that crazy paper on the wall?" he asked the trembling decorator.

"Your—your wife, sir?" stammered the man.

"Um," reflected the M. of H. "on second thoughts, it is rather effective."

* * *

Farmers who have perused the articles on Harnessing Horsepower appearing in Hydro News must have had a definite advantage over non-readers during this inclement spring. No doubt they were able to build cofferdams and dewater their flooded acres so that seeding could proceed as usual.

It is said that on account of the absence of bees, which assist in pollination during the spring bloom, there will be a dearth of drupe fruits this year.

A farmer aloft in a tree
Had anxiously signalled a bee,
But the weather was bad,
The insect was mad,
And he only got stung on the knee.

* * *

Persuading unseated passengers to move to the rear is said to be one of the principal problems encountered during rush hours by the T.T.C. Now that the season for strawberry short cake is here again, a glowing advertisement for whipping cream posted high at the back of the car might turn the trick.

* * *

Now that the war with the Nazis is over, people are beginning to grumble about continuing restrictions, but—

I still run my car though the tires may be slipping:

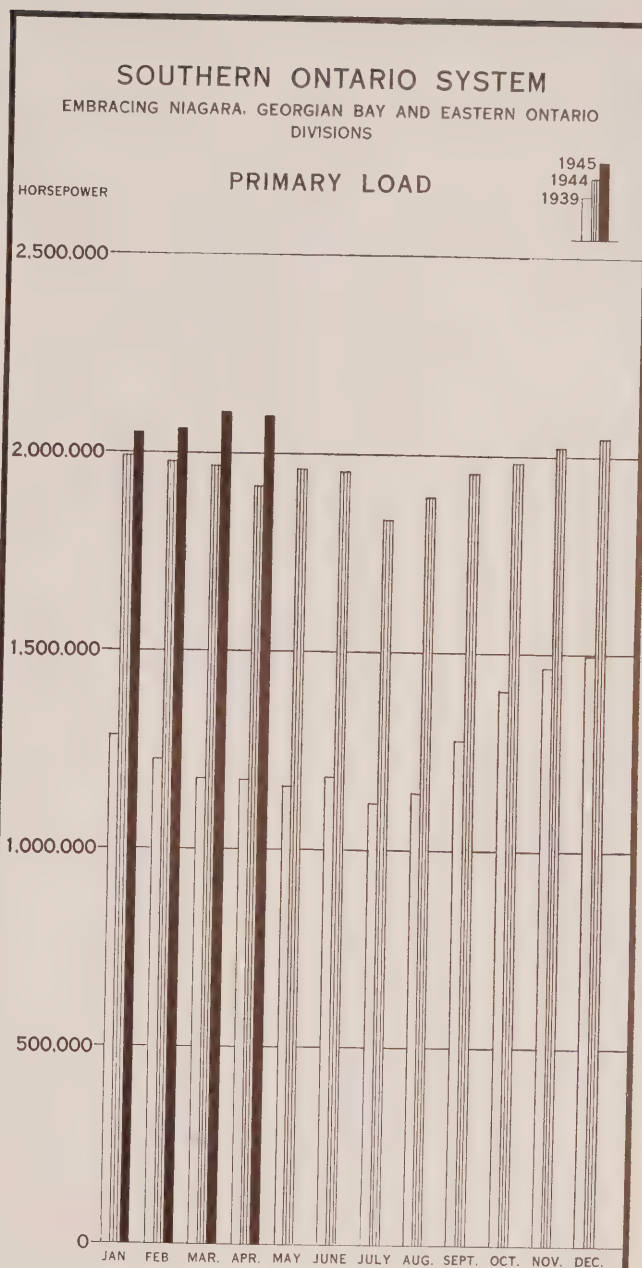
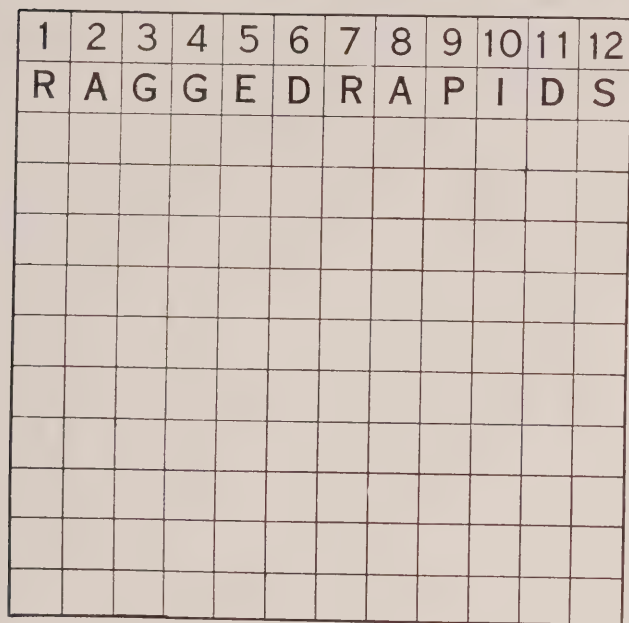
There's plenty to eat though good bacon is rare:

I scoff at the milk and the cream that's not whipping:

But in Europe—thank heaven I'm not over there.



"We said light housekeeping, not lighthouse keeping!"



SOUTHERN ONTARIO SYSTEM	2,176,525	2,066,448	+ 5.3
THUNDER BAY SYSTEM	136,595	135,791	+ 0.6
NORTHERN ONTARIO PROPERTIES	<u>295,284</u>	<u>243,052</u>	+ 21.5
TOTAL	2,608,404	2,445,291	+ 6.7

MUNICIPAL LOADS, MARCH, 1945

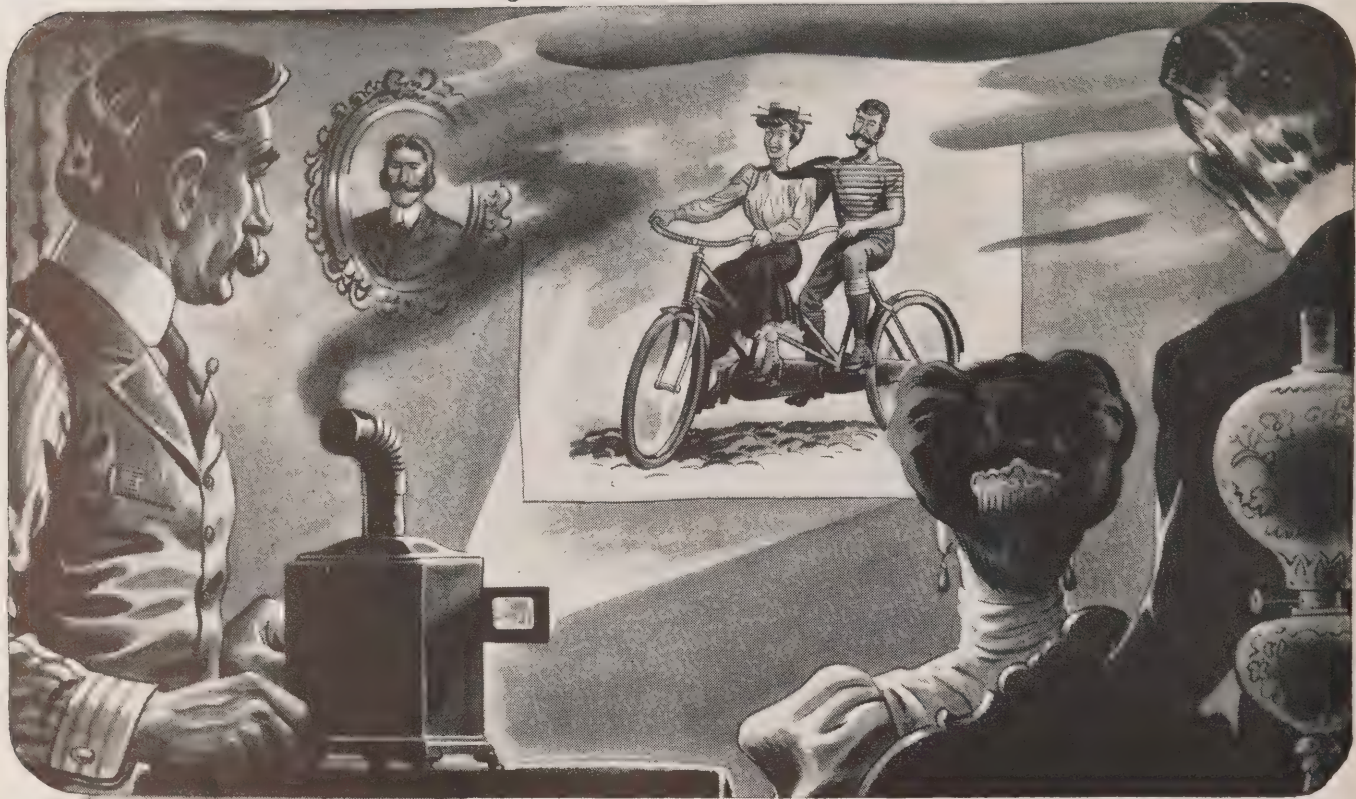
SOUTHERN ONTARIO SYSTEM

SOUTHERN ONTARIO SYSTEM			H.P.		Popula- tion		H.P.		Popula- tion	
NIAGARA DIVISION (25-Cycle)			H.P.		Popula- tion		H.P.		Popula- tion	
Acton	1,699	1,903	Erie Beach	10	21	Palmerston	654	1,400		
Agincourt	211	P.V.	Essex	543	1,886	Paris	2,139	4,604		
Ailsa Craig	145	487	Etobicoke	7,963	V.A.	Parkhill	212	1,029		
Alvinston	122	649	Exeter	797	1,654	Petrolia	985	2,768		
Amherstburg	1,064	2,704	Fergus	1,345	2,759	Plattsville	148	P.V.		
Ancaster Twp.	397	V.A.	Fonthill	192	860	Point Edward	1,844	1,199		
Arkona	70	403	Forest	620	1,562	Port Colborne	1,758	6,928		
Aurora	1,379	2,821	Forest Hill	7,447	12,172	Port Credit	992	1,934		
Aylmer	854	1,985	Galt	12,158	15,126	Port Dalhousie	872	1,599		
Ayr	180	760	Georgetown	2,029	2,452	Port Dover	439	1,790		
Baden	627	P.V.	Glencoe	214	763	Port Rowan	123	700		
Beachville	834	P.V.	Goderich	1,655	4,674	Port Stanley	310	824		
Beamsville	463	1,227	Granton	80	P.V.	Preston	4,473	6,656		
Belle River	186	836	Grimsby	877	1,988	Princeton	149	P.V.		
Blenheim	667	1,873	Guelph	12,194	23,074	Queenston	104	P.V.		
Blyth	141	662	Hagersville	618	1,524	Richmond Hill	525	1,295		
Bolton	195	629	Hamilton	170,394	164,719	Ridgetown	672	1,986		
Bothwell	147	683	Harriston	499	1,292	Riverside	1,271	5,235		
Brampton	3,161	6,157	Harrow	596	1,092	Rockwood	128	P.V.		
Brantford	23,805	31,622	Hensall	183	686	Rodney	152	758		
Brantford Twp.	1,334	V.A.	Hespeler	2,991	2,938	St. Catharines	31,199	34,541		
Bridgeport	143	P.V.	Highgate	94	322	St. Clair Beach	95	138		
Brigden	93	P.V.	Humberstone	615	2,831	St. George	189	P.V.		
Brussels	151	784	Ingersoll	3,379	5,757	St. Jacobs	349	P.V.		
Burford	243	P.V.	Jarvis	179	513	St. Marys	1,718	4,009		
Burgessville	50	P.V.	Kingsville	724	2,453	St. Thomas	8,426	17,045		
Burlington	1,703	3,925	Kitchener	30,180	35,465	Sarnia	6,400	18,599		
Burlington Beach	394	1,474	Lambeth	131	P.V.	Scarborough Twp.	4,707	V.A.		
Caledonia	426	1,430	LaSalle	286	907	Seaforth	1,103	1,782		
Campbellville	43	P.V.	Leamington	1,922	6,048	Simcoe	2,980	6,304		
Cayuga	152	700	Listowel	1,520	2,984	Smithville	196	P.V.		
Chatham	8,062	17,184	London	43,356	81,567	Springfield	77	382		
Chippawa	355	1,228	London Twp.	586	V.A.	Stamford Twp.	2,957	8,275		
Clifford	108	491	Long Branch	1,394	4,258	Stoney Creek	243	933		
Clinton	689	1,879	Lucan	190	643	Stouffville	355	1,198		
Comber	128	P.V.	Lynden	114	P.V.	Stratford	7,784	17,163		
Cottam	88	P.V.	Markham	342	1,175	Strathroy	1,570	2,834		
Courtright	52	355	Merlin	106	P.V.	Streetsville	198	701		
Dashwood	114	P.V.	Merritton	11,434	2,916	Sutton	217	949		
Delaware	75	P.V.	Milton	1,549	1,915	Swansea	3,057	7,100		
Delhi	711	2,430	Milverton	437	994	Tavistock	654	1,080		
Dorchester	119	P.V.	Mimico	2,864	8,785	Tecumseh	415	2,391		
Drayton	127	528	Mitchell	791	1,670	Thamesford	252	P.V.		
Dresden	483	1,525	Moorefield	76	P.V.	Thamesville	208	816		
Drumbo	96	P.V.	Mount Brydges	104	P.V.	Thedford	124	598		
Dublin	25	P.V.	Newbury	33	298	Thorndale	72	P.V.		
Dundas	3,023	5,245	New Hamburg	646	1,441	Thorold	3,163	5,284		
Dunnville	1,497	3,916	Newmarket	1,958	3,800	Tilbury	1,544	1,923		
Dutton	266	830	New Toronto	12,254	9,469	Tillsonburg	1,665	4,602		
East York Twp.	9,696	41,578	Niagara Falls	11,338	20,371	Toronto	384,323	657,612		
Elmira	1,389	2,069	Niagara-on-the-Lake	786	1,764	Toronto Twp.	3,085	V.A.		
Elora	465	1,185	North York Twp.	11,182	V.A.	Wallaceburg	4,848	4,802		
Embro	115	420	Norwich	464	1,301	Wardsville	37	221		
Erieau	121	218	Oil Springs	182	541	Waterdown	243	867		
			Otterville	108	P.V.	Waterford	457	1,294		
						Waterloo	6,463	8,968		
						Watford	392	1,023		

MUNICIPAL LOADS, MARCH, 1945

	H.P.	Popula- tion		H.P.	Popula- tion		H.P.	Popula- tion
Welland	13,075	14,899	Neustadt	48	43	Kemptville	357	1,230
Wellesley	114	P.V.	Orangeville	730	2,558	Kingston	15,944	29,545
West Lorne	225	768	Owen Sound	6,373	13,559	Lakefield	468	1,301
Weston	5,593	6,234	Paisley	126	530	Lanark	98	686
Wheatley	218	761	Penetanguishene	1,019	4,177	Lancaster	59	570
Windsor	55,330	118,040	Port Carling	109	520	Lindsay	4,060	8,345
Woodbridge	639	1,100	Port Elgin	447	1,415	Madoc	211	1,130
Woodstock	9,584	12,339	Port McNicoll	87	950	Marmora	140	1,004
Wyoming	115	538	Port Perry	274	1,175	Martintown	38	P.V.
York Twp.	20,383	77,175	Priceville	10	P.V.	Maxville	110	811
Zurich	117	P.V.	Ripley	104	420	Millbrook	113	749
(66½-Cycle)			Rosseau	25	305	Morrisburg	298	1,484
Bronte	181	P.V.	Shelburne	244	1,053	Napanee	1,456	3,241
Oakville	1,514	3,369	Southampton	547	1,467	Newcastle	213	701
Trafalgar Twp.	604	V.A.	Stayner	279	1,106	Norwood	149	710
GEORGIAN BAY DIVISION			Sunderland	81	P.V.	Omeme	184	630
(60-Cycle)			Tara	101	510	Orono	103	P.V.
Alliston	394	1,700	Teeswater	145	973	Oshawa	18,983	26,610
Arthur	157	1,089	Thornton	27	P.V.	Ottawa	38,377	150,816
Bala	101	355	Tottenham	103	532	Perth	1,855	4,187
Barrie	4,383	9,599	Uxbridge	319	1,480	Peterborough	15,908	24,977
Beaverton	201	941	Victoria Harbour	64	979	Pictou	1,307	3,400
Beeton	87	617	Walkerton	1,031	2,534	Port Hope	2,917	4,997
Bradford	255	1,041	Waubushene	87	P.V.	Prescott	1,579	3,318
Brechin	47	P.V.	Warton	315	1,750	Renfrew	182	5,673
Cannington	166	761	Windermere	23	117	Richmond	68	428
Chatsworth	71	333	Wingham	840	2,149	Russell	73	P.V.
Chesley	591	1,812	Woodville	70	439	Smiths Falls	3,153	7,741
Coldwater	183	545	EASTERN ONTARIO DIVISION			Stirling	297	947
Collingwood	2,717	6,249	(60-Cycle)			Trenton	5,427	8,183
Cookstown	85	P.V.	Alexandria	225	1,976	Tweed	272	1,181
Creemore	142	661	Apple Hill	38	P.V.	Warkworth	77	P.V.
Dundalk	221	686	Arnprior	1,229	4,019	Wellington	196	948
Durham	351	1,874	Athens	106	626	Westport	107	725
Elmvale	147	P.V.	Bath	37	325	Whitby	1,464	4,236
Elmwood	58	P.V.	Belleville	8,192	15,498	Williamsburg	93	P.V.
Flesherton	55	452	Bloomfield	92	636	Winchester	353	1,017
Grand Valley	142	645	Bowmanville	3,119	3,850	THUNDER BAY SYSTEM		
Gravenhurst	1,297	2,261	Brighton	373	1,462	(60-Cycle)		
Hanover	1,302	3,190	Brockville	5,317	11,112	Fort William	16,159	30,370
Holstein	24	P.V.	Cardinal	306	1,602	Nipigon Twp.	228	V.A.
Huntsville	1,212	2,943	Carleton Place	1,841	4,143	Port Arthur	20,021	24,217
Kincardine	757	2,483	Chesterville	263	1,094	NORTHERN ONTARIO		
Kirkfield	26	P.V.	Cobden	108	643	PROPERTIES		
Lucknow	350	856	Cobourg	2,437	5,907	Nipissing District		
MacTier	131	V.A.	Colborne	237	960	(60-Cycle)		
Markdale	173	776	Deseronto	222	1,002	North Bay	5,223	16,013
Meaford	803	2,759	Finch	87	396	Patricia District		
Midland	4,328	6,754	Frankford	180	1,095	(60-Cycle)		
Mildmay	129	764	Hastings	151	823	Sioux Lookout	308	1,967
Mount Forest	509	1,936	Havelock	165	1,103	Sudbury District		
			Iroquois	277	1,123	(60-Cycle)		
						Capreol	253	1,660
						Sudbury	9,605	36,724

HYDRO *Lightens* The Way!



THEY WOULDN'T HAVE BELIEVED IT!

● The gay nineties weren't so gay, by today's standards. Think how the folks then would have felt had anyone told them of the wonders of the modern motion picture theatre. They wouldn't have believed it!

In the transition from those days to this modern age we owe a great deal to electricity. Today—we are dependent upon it in hundreds of ways. It will do more for us in the days to come!

In the future Hydro will serve industry, the home and the farm in even greater measure than in the past. Plan now, to let Hydro lighten your tasks and make your living more comfortable in the brighter days ahead.



THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO

HYDRO *News*



"PUTTING ON THE DOG"

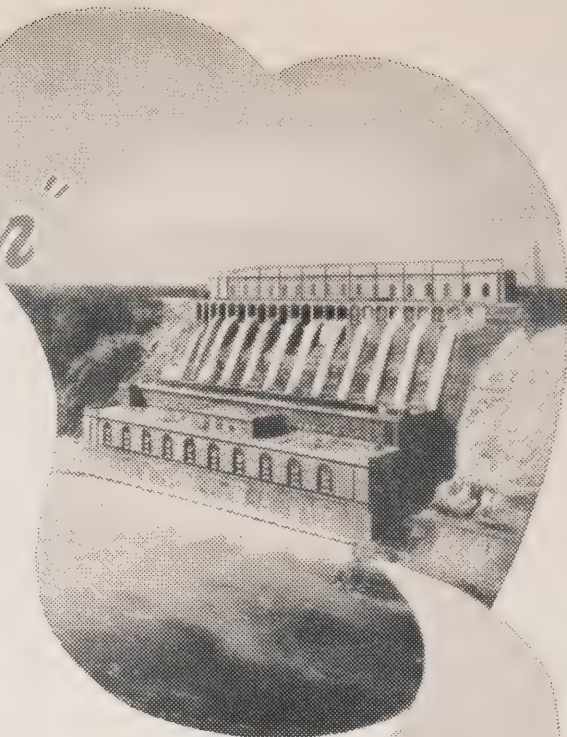
HYDRO provides fast, dependable

"Made to order" SERVICE

Do you realize that Hydro power must be made to your order . . . made and delivered to you so quickly that it would seem to be always there? Electricity cannot be stored. It must be made within a tiny fraction of a second of the time it is used. The flow of water to the generators is controlled by sensitive automatic gates, so as to make only enough for the demands of the moment.

Whenever you flip a switch, you use electricity before the water which made it can leave the power house. Your order is received and filled faster than a good camera can wink its eye. Yet the power comes to you through a giant transformer station, a local distribution station, a small transformer near your home . . . all connected by many miles of transmission and distribution lines.

Millions of dollars worth of equipment and a multitude of watchful personnel stand ready to serve you at the touch of your finger on a switch at any moment of the day or night. That is what Ontario has learned to expect from Hydro service.



Queenston-Chippawa
Generating Plant

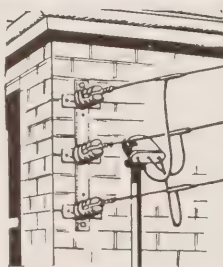


Burlington
Transformer Station



A Municipal Distribution Station

ONLY THIS ONE PART DEPENDS ON YOU



Your house must be adequately wired if you are to have full benefit from the electricity you may want to use. If your place is wired for a range and a water heater, you can assume that you have enough wiring from the small transformer to your house. From there, be sure that you have enough circuits and plenty of outlets conveniently placed in every room. Remember that any one outlet can supply only a limited amount of power efficiently and safely. Remember, too, that you will want an ever-growing number of electrical conveniences in the years to come. The economical time to wire adequately is when you are building or making major alterations. Plan now for your electrical future by wiring completely.

THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO



THE HYDRO - ELECTRIC POWER COMMISSION OF ONTARIO

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THE FRONT COVER



“PUTTING On The
Dog” on this
month's front cover may be
permitted when it is re-
membered that Nee-Phos is
a registered Chinese Chow
whose mother rated a
\$4,000 listing in the canine
Who's Who. In addition,
Nee-Phos has a very definite
link with Hydro through
his owner, J. H. Mackay of
the Commission staff. Mr.
Mackay, who has made
many arresting front covers
for Hydro News, got this
interesting after-lunch siesta
study.

Volume 32

July and August, 1945

Numbers 7 & 8

CONTENTS

	Page
In the Garden - - - - -	2
Page Three - - - - -	3
Harnessing Horsepower - - - - -	4
George Cousins Honoured - - - - -	8
Renfrew Joins Hydro Family - - - - -	9
Grid System In Britain - - - - -	13
C-F-Three-H Calling - - - - -	14
Five-Year Rural Plan - - - - -	19
Sarnia Hydro's Victory Window - - - - -	20
Hydro Home Forum - - - - -	21
At The Shows - - - - -	23
Around The Hydro Circuit - - - - -	25
Lighter Lines - - - - -	26
Downwords Puzzle - - - - -	27
Monthly Load Summary - - - - -	27
Municipal Loads - - - - -	28



*And the glory of the
garden it shall
never pass away
Kipling...*

TORONTO has been called the City of Homes. And what would a home be without a garden . . . a place where the tired city worker can smoke the pipe of peace as he rambles leisurely among his roses—a place of secluded and delightful retirement where he may regain that poise and tranquility of soul which is so often disturbed by the feverish activities of modern life?

The Hydro Horticultural Club has been to the forefront in encouraging an interest in gardening, and the “back yard” of many an H.E.P.C. employee has been converted into “a thing of beauty and a joy forever.”

In the suburban districts of Greater Toronto there is naturally more space and, therefore, greater opportunity for planning and arranging a garden with artistic effect. From the accompanying photographs of the beautiful garden of H. E. Brandon (Electrical Engineering Dept.) on Blythwood Road an idea may be gained of what may be done with a fair-sized lot.



A PROGRESSIVE STEP

IT is of more than passing interest that the Toronto Hydro-Electric System has adopted two-way radio communication between its Carlton Street office and trouble shooters in patrol cars to speed up emergency service in this great metropolitan area.

By adapting the science of radio to the needs of the utility field, the Toronto Hydro-Electric System marks another progressive chapter in its history and is now in a position to handle emergency calls in a fraction of the time formerly required. The functions of two-way radio communication in relation to Hydro service are discussed in an interesting article featured in this issue of Hydro News.

A VITAL ATTRIBUTE

MUCH has been said and written on the subject of winning friends and influencing people and, down through the years, wise parents have counselled their children that courtesy costs nothing but means a great deal on the way through life.

The history of all great business enterprises shows that the men and women who bring to their daily tasks qualities of mind and character which command the respect and confidence of their colleagues and the people with whom they have business dealings are the employees who build good-will for the organization they serve.

While it goes without saying that an employee should possess the necessary qualifications for his specific job, that employee is lacking one all-important qualification if he has not learned how to "get on" with his fellow men.

Courtesy is not an attribute which should be paraded only on special occasions for the achievement of selfish objectives: it should be regarded as something which, in effect, is the very essence of a gracious way of life both in the home and at the office. Only those who are entirely lacking in good breeding and common sense would regard politeness and good manners as a sign of weakness. It is regrettable that many men and women, for one reason or another, have developed a complex over a period of years that prompts them to be curt and churlish at times in their relations with other people.

Today, it is highly significant that employers

and personnel managers who are entrusted with responsibility of selecting employees, are placing greater emphasis upon the personality of an individual in relation to his or her qualifications for any specific vacancy.

In Ontario, Hydro is a pre-eminent example of an organization in which the spirit of courtesy and service among individual employees has, in no small measure, contributed to the building up of an organization which today ranks among the greatest of its kind in the world.

In Hydro's progressive march to new and wider service, all its employees throughout Ontario, whether their tasks be great or humble, can continue to exemplify that spirit which is in keeping with the functions of an enterprise which was established on the fundamental principle of public service in its truest sense.

NONE SHOULD KNOCK IN VAIN

ONE of the greatest responsibilities of any country is the health and welfare of its children, for upon them the future of the nation depends.

In this vital work, no institution of healing has a finer record of service than Toronto's Hospital for Sick Children, where many amazing feats of surgical and medical skill have been performed to alleviate the suffering of little folk over a period of seventy years.

Within its walls, where the work of mercy completely transcends all racial, religious and political distinctions, one can find children not only from the great metropolitan centre of Toronto and from all points of Ontario, but little ones who have been brought from distant places for skilled treatment.

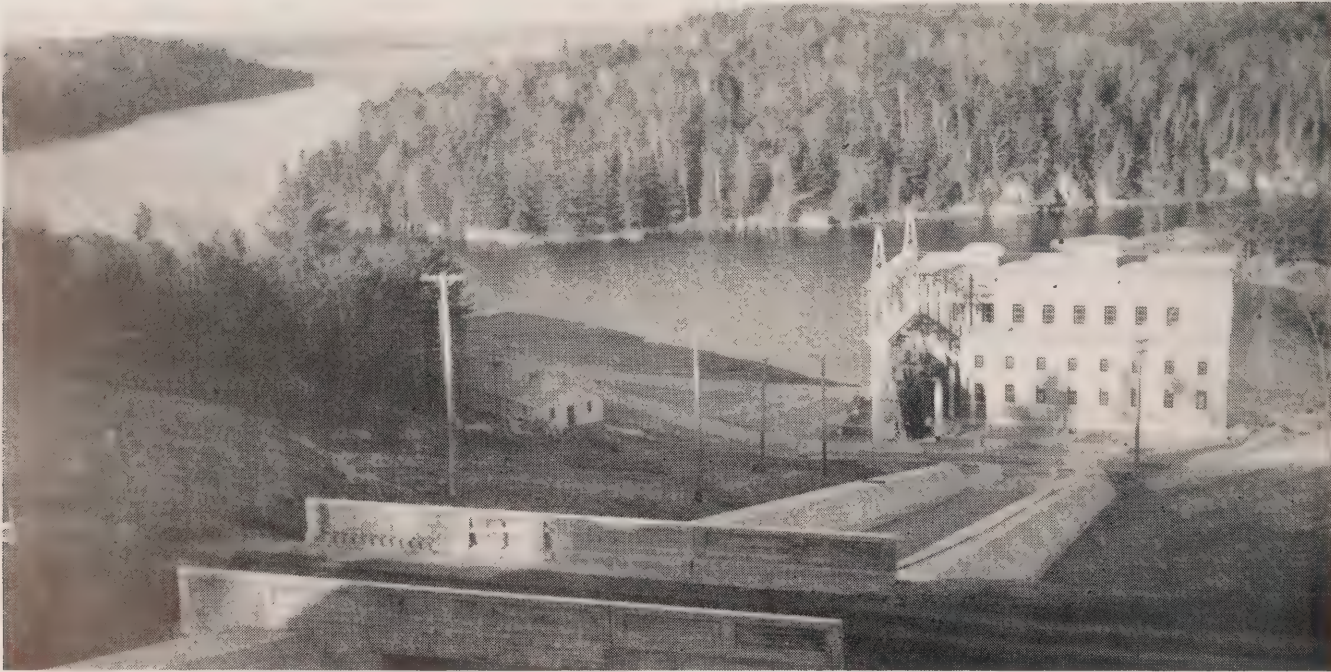
The ever-increasing demands upon the over-taxed facilities of this hospital make it necessary to provide a building which will be adequate, in every way, to carry on this humanitarian work.

Hydro employees, in common with their fellow Canadians, quickly responded to the province-wide appeal for \$6,000,000 required for the construction of a new hospital.

All who have contributed have the satisfaction of knowing that they have shared in one of the most worthy of all human causes.

No child should ever knock in vain.

HARNESSING HORSEPOWER



BARRETT CHUTE power plant on the Madawaska river. Extensive hydraulic tests were made on turbines, governors, penstocks and canal at this H.E.P.C. generating station.

HYDRAULIC TESTS AT THE SITE

By J. J. TRAILL,
Hydraulic Engineering Department, H.E.P.C.

HYDRO-ELECTRIC power plants are designed to secure the maximum of electrical energy from the water power available. If the machinery installed at the power house fails to meet the requirements of efficiency and economy of operation, the usefulness of the whole development will be adversely affected. As the hydraulic set-ups vary with different developments, especial care must be taken to provide the proper equipment for the particular job. And after the erection of the generating units extensive performance tests must be carried out to determine whether or not they are functioning according to specifications.

The primary hydraulic test—made to determine the efficiency and capacity of the turbine—is commonly known as the acceptance test. This involves accurate measurements of the head of water acting on the turbine, the quantity of water flowing, and the power produced by the turbine. Of these measurements, that of the quantity of water flowing, owing to the conditions under which it has to be taken, is, in many respects, the most difficult to obtain.

Some idea of the difficulty experienced in measuring this factor will be gained from a consideration of the very large amount of water which may pass through a turbine every second. For example, at the Queenston plant of the

H.E.P.C. this is as much as 2,300 cubic feet. And this water is moving at high velocity through a complicated succession of conduits and passages. Moreover, when a plant is in operation—as it often is when acceptance tests are made—the water flow cannot be measured in canal, forebay, or tailrace, as the flow to or from other units beside the one being tested is moving in these channels.

Various methods of measuring quantity of water flow have, however, been devised, some adaptable to one layout and others to another. Several of these methods will be briefly described.

The Gibson Method

The first is known as the Gibson method and was devised by Dr. Norman Gibson, now vice-president and chief engineer of the Niagara Falls Power Company and formerly hydraulic engineer of the Ontario Power Company. It is based on the principle that the change of momentum of a body (in this case a body of water) is proportional to the impulse causing the change.

Suppose one attaches an instrument for measuring pressure to the penstock supplying water to the turbine and then gradually closes the gates of the turbine, the mass of water in the penstock will be brought to rest and, if its velocity originally was say ten feet per second, the change in its momentum will be this quantity “ten” multiplied by its mass. While the gates are closing, the change in pressure and the time during which it acts can be measured. The pressure measures the force acting on the water and this



A GROUP of houses built for the Commission's operating staff and families at Barrett Chute. Much of the site for the Hydro colony was in bush, but it was cleared and graded to secure a fine outlook upon Calabogie lake.

force, multiplied by the time through which it acts, is the impulse changing the momentum of the water. By measuring the diameter and length of the penstock, the mass of the water in it can be calculated, and the impulse having been measured by the pressure measuring instrument, then the only unknown quantity in the equation "the impulse is equal to the change in momentum" is the change in the velocity of the water. As the final velocity of the water is zero, the change is equal to the velocity before the turbine gates began to close. This velocity multiplied by the cross-sectional area of the penstock is the amount of water flowing to and through the turbine, and is usually expressed as so many cubic feet per second.

Gibson Instrument Measures Impulse

The instrument used to measure the impulse is known as a Gibson instrument and is shown in one of the illustrations, connected to a penstock in the Queenston plant. It consists of a mercury U-tube, in which the level of the mercury measures the pressure and the change in pressure in the penstock. A short section of the U-tube consists of clear glass tubing of uniform bore set up in front of a special camera in which a photographic film on a circular drum moves at a uniform rate past a narrow slot and provides a photographic record of the movement of the mercury column in the glass tube, during the closure of the turbine gates and for a few seconds before and after, as well. In the tall column near the front of the instrument, a pendulum swings past the camera lens once each second, marking time intervals on the film. Calibration of the U-tube, timing of the pendulum, interpretation and scaling of the record on the film all involve careful and accurate measurement, but in principle this method of measuring the quantity of

water supplied to the turbine is simple, precise and scientifically sound.

It has been applied in all of the power plants at Niagara Falls, and also at Chats Falls, at Abitibi Canyon and at many other power plants in the province.

Measurement By Current Meters

In many low head plants with open flume settings, the Gibson method is not applicable and recourse is made to the current meter for measurements of the flow. The current meter was referred to and described in the third article in this series, its application in that case being the measurement of flow of rivers.

In using the meter to measure the flow through a turbine, the measuring section is usually selected at the headworks, and the meter (or a group of meters) is rigidly attached to a movable frame or rod and placed successively at 30 or more points on the measuring cross-section. At each of these points the velocity is measured, and the velocity multiplied by the partial area to which it applies gives the part of the total flow passing through the small area. By summing these several flows the total flow to the turbine is obtained. This method interferes less with the ordinary operation of the power plant than the Gibson method but requires a much longer time for the completion of a test.

The Salt Velocity Method

Sometimes it is possible to install a sharp crested weir in the tailbay of the power plant and measure the flow thereby. The weir raises the tailwater level during the test and is applicable generally for the measurement of moderate flows only.

A method which is greatly favoured by some organiza-

tions but which has not been used by the Commission's staff is that known as the "salt velocity" method. This method is based on the fact that salt in solution increases the electrical conductivity of water. A charge of salt in solution is injected into the conduit and its movement across electrodes, suitably disposed at points downstream, is recorded graphically on electrical instruments. The time of passage from the point of injection to the electrodes is measured accurately. The flow in cubic feet per second is equal to the volume of the conduit between point of injection and electrodes divided by the time of passage of charge. This method involves considerable expense for the installation of the equipment, experience in its design and operation and very accurate measurement of the time interval.

A simpler method sometimes very useful for approximate tests, is the colour injection method. In this, a charge of a solution of a strong colouring matter, such as fluorescein, is injected into the conduit and its time of passage to the draft tube outlet is observed. This method, used successfully by the Commission's staff in a number of instances, requires only a small amount of equipment and enables tests to be carried out with a minimum of disturbance to the regular operating procedure at the plant. It is, however, less accurate than the other methods described.

Measurement of Heads

In coming to a discussion of the measurement of heads, it should be pointed out that in a plant or unit test, the head is the difference in level of headwater and tailwater, while in a test of the turbine alone it is the above head less all



MEASUREMENTS OF water flow are taken by current meters at the head-works of the canal leading to the power plant.

friction losses to the entrance to the turbine casing. In the former case, the measurement is relatively simple, but for its accurate determination it is customary to install a float well—possibly a 12 inch pipe with a small opening communicating with headwater or tailwater—so that waves and surges of the sometimes turbulent water surfaces are damped. A float installed in the float chamber, a rod supported by the float, and a scale, make a very simple

instrument, enabling precise measurements to be made during the test.

Automatic Gauges

It is common practice now to install also permanent headwater and tailwater gauges, which automatically transmit an indication of the water level to the control room of the power house. Such a pair of indicators in the Barrett Chute control room are illustrated. One of them is actuated by an instrument in the forebay and the other by an instrument in the reservoir at the main dam about three-quarters of a mile away. Both measure headwater level, but at different points. The difference in their indications measures the loss of head in the power canal. These water-level indicators are essential for safe and satisfactory operation of the plant, but, for tests, the simple float gauge is more reliable and accurate.

In the test of the turbine to determine its efficiency, the head is measured at entrance to the turbine casing. Here the pressure head might be measured by an ordinary pressure gauge, but this is not usually sufficiently accurate and it is, therefore, common practice to use a mercury U-tube even for measurement of high pressures.

Measurement of Power

The measurement of the power developed by the turbine has been referred to in connection with the measurement of the efficiency of the generator. The power developed by the turbine is simply the power transmitted by the turbine to the generator. This is determined by measuring the output of the generator and adding the generator losses. For the turbine efficiency test, these losses are computed from electrical measurements made during each run of the test, accurate calibrated instruments being used for this purpose.

Measurement of the three quantities—flow, head and power—provides the information to enable the efficiency of the turbine and the complete unit to be calculated.

Test of Whole Unit

The acceptance test is made at the same time as, and as part of, the test of the whole unit. The procedure followed, when the quantity of water flow is measured by the Gibson method, is to synchronize the unit with the system in which it operates.

The turbine gates are opened to the point at which it is desired to make the particular test run. Then, on signal, they are closed at a predetermined rate. Before, during and after their closing, observers stationed at all instruments set up for the tests make the necessary observations. The individual test runs about five minutes and is followed by a series of similar runs covering the full range of the gate opening and load.

Other Measurements and Observations

The acceptance tests of the turbine are carried out primarily to determine whether the capacity and efficiency guaranteed by the manufacturer are realized. In the course of the tests a great deal of additional information is gathered. The friction loss in intake and penstock is measured to check the designer's computations and to be used as a guide in future developments; the flow required to generate various outputs is determined so that the operating staff may keep records of flow from day to day; the leakage through turbine gates is measured and observations are

made of certain pressures related to flow. Once accurately measured and related to the power output of the unit or certain differential pressures, the flow may be determined at any future time by much simpler means than those which have been described.

Efficiency of Turbine at Different Heads

Turbine guarantees are made for operation of the unit at a particular head. Actually, the head may be different from this for much of the time. If the unit can be run at speeds different from the normal operating speed, it is possible to derive from the measurements the results that would be obtained at various heads. Such a test was possible in one of the units at the Abitibi Canyon plant, the unit being run at various speeds ranging from ten per cent below to ten per cent above normal. The information was particularly valuable when the generating unit was transferred to the DeCew Falls Development where the gross head is 265 feet, as compared with 240 feet at Abitibi Canyon.

Tests of Governing Equipment

Tests of the governing equipment are made to check its behaviour in normal and emergent operations. The measurements include the percentage increase in speed above normal and the pressure rise in the penstock when the governor closes the turbine gates. Rapid governor timing results in excessive pressure rise and slow timing in ex-

cessive speed rise. The tests enable the timing to be adjusted to secure the most satisfactory governing condition in normal operation while keeping the pressure rise and speed rise within safe limits during an emergency shut-down.

Tests Made To Measure Surge

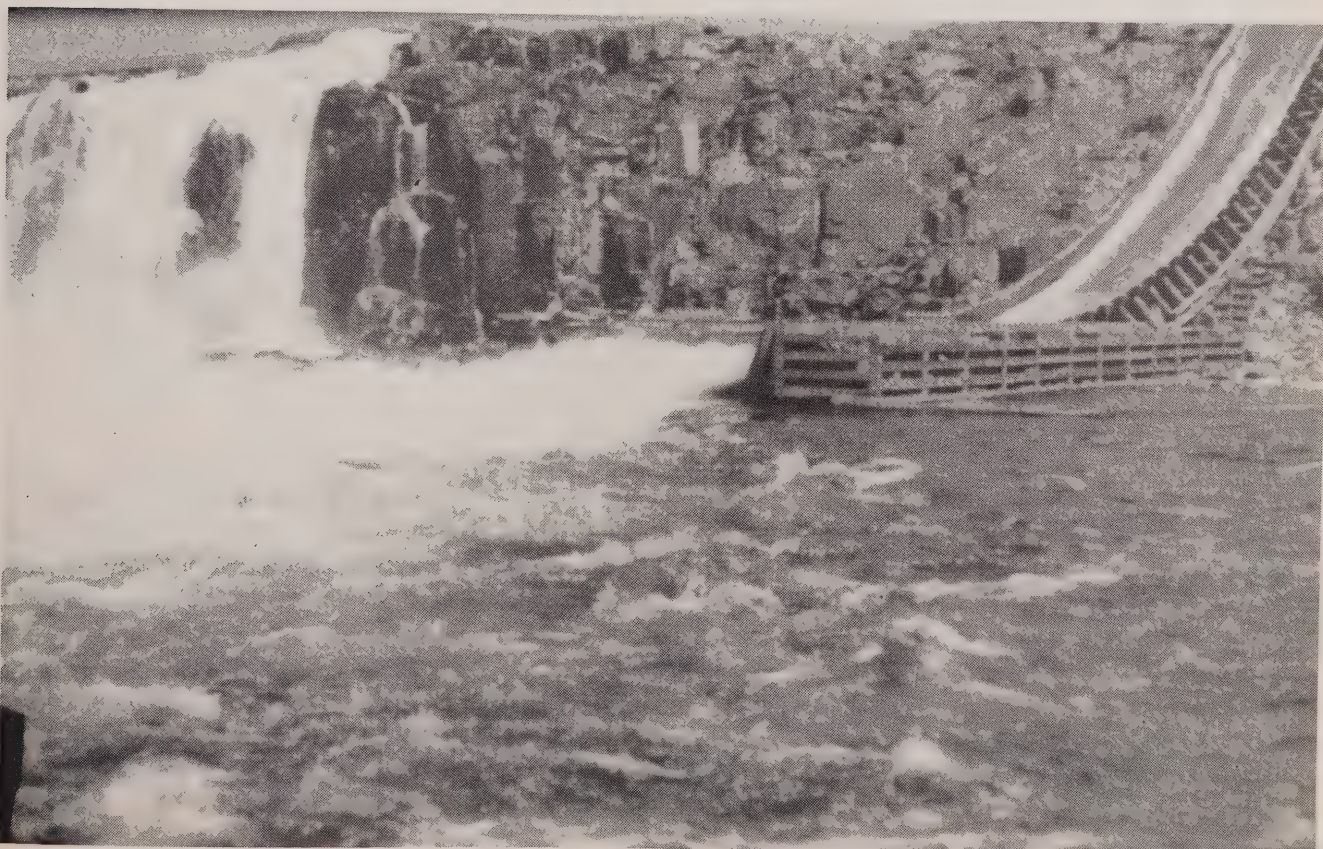
Related to the speed rise in the penstock is the surge in the power canal when the turbine gates close suddenly. In single unit or two-unit plants having power canals leading to the forebay, this is a hazard which must be provided for in design of forebay walls. Tests are made to measure the surge with sudden shut-down to check the computed values. Measurements are also made of friction loss, and friction coefficients in the canal under conditions of steady flow.

Maintaining Headwater Levels

Construction of the power plant nearly always raises the water level in the river channels upstream. Frequently after the plant is in full operation, prolonged tests at various flows are necessary with measurement of water level at strategic points to enable the operator to maintain the desired headwater levels at points more or less distant from the plant.

A case in point is that of a plant which is supplied from a lake-like expanse of river through a canalized channel leading to the forebay, while flood waters pass through a

GREAT LOGS look like sticks of colored candy as they are swept over the log-chutes by on-rushing water. The flow capacity of these chutes is determined by special tests.



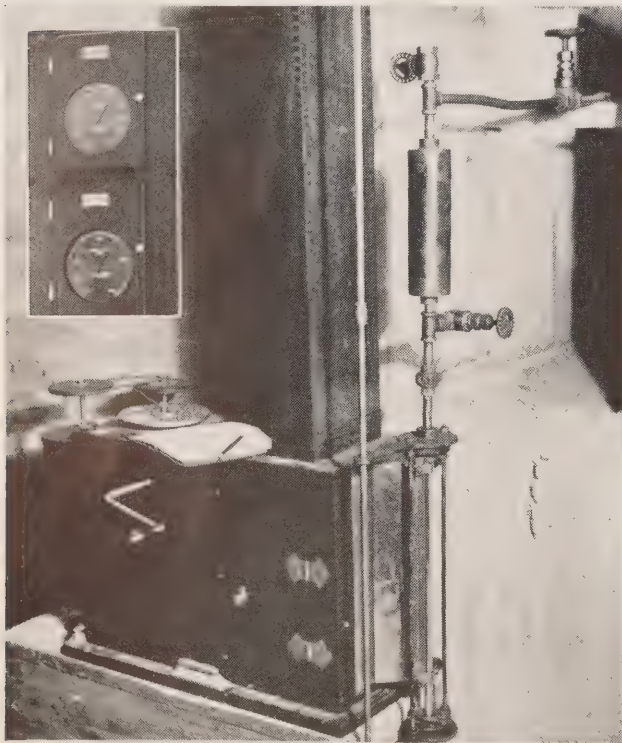
HARNESSING HORSEPOWER

natural outlet leaving the canalized channel between the lake and the forebay.

Regulate Flood Discharge

The forebay level at the plant is, of course, lower than the regulated lake level, and the lake, being distant from the plant, is not under direct observation. This difference in gradient varies with use of water at the plant and flow through the sluices in the floodwater channel. From an analysis of measurements at several flows, a series of graphs was developed to enable the operator to regulate flood discharge and forebay levels to maintain the lake level within predetermined limiting elevations.

Similar conditions obtain at many other plants necessitating investigations of channel flows and levels to secure



THIS GIBSON instrument was set up to measure the flow of water in the penstocks at the Queenston plant. Inset are the head-water gauges in the control room at Barrett Chute.

the maximum operating head at the plant without undue wastage of water.

Duties of Operating Staff

Investigation of the capacity of control and floodwater sluices in the dam may be required to enable complete flow records for the river to be secured. Tests of ancillary structures such as log-chutes are also necessary to measure their flow capacity while sluicing sawlogs and pulpwood satisfactorily.

The staff who are to operate the station arrive a short time before the station is scheduled to go into operation to give them an opportunity to become familiar with the

GEORGE G. COUSINS HONoured BY I.E.S.

Named Vice-President, Representing Canadian Region And Made A Fellow Of The Society

A signal honour has been conferred upon George G. Cousins, supervising lighting engineer of The Hydro-Electric Power Commission of Ontario, in his election as vice-president of the Illuminating Engineering Society, representing the Canadian region. At the same time, he was made a Fellow of the society of which he has been a member for the past thirty years.



Mr. Cousins joined Hydro in 1912, and was in charge of the illumination laboratory until 1938, when he was transferred to the promotion department to supervise the lighting service section. During this long period of service he became the first chairman of the Illumination Club of Toronto, the first chairman of the Toronto chapter of the I.E.S. and Canadian director of the society which has affiliations in American and European cities.

The illumination of the Horse Shoe Falls, which has attracted many tourists to Niagara from both sides of the border, was designed and carried out under Mr. Cousins' supervision. He was actively associated also with the lighting of the buildings and approaches of the Rainbow Bridge at Niagara Falls and sectional lighting of the Queen Elizabeth Highway, while a plan of school lighting, which he designed, was adopted by the Ontario Department of Education.

physical layout of hydraulic and electric plant and the operation of equipment. There is usually a period from the time when the unit is first turned over until after it is dried out and tested, when it is still in the hands of the manufacturer. After it is once synchronized and commences to deliver commercial load, its operation is the responsibility of the operating staff, although, for a period, usually of 30 days, the manufacturer is required to have an engineer available in case trouble should develop.

Staff Must Be Diligent

The manufacturer of equipment usually guarantees it for a period of one year against defects in material or workmanship. During the first months of operation the operating staff must be diligent in detection of such defects in their early stages, so that the condition can be remedied before the trouble has extended to the point where a major repair job is necessary. Such difficulties usually show up in shorter time than a year, after which operation becomes a matter of routine, with the maintenance of equipment in first-class condition as the essential job, and the occasional system "shake up" due to line trouble or equipment failure as a variation from normal operation duties.

RENFREW JOINS HYDRO FAMILY

First Local Commission Elected This Year—
Town Got Name From Scottish Shire
—Was Traversed By Intrepid Champlain



LOOKING NORTH along the main street of Renfrew, towards the Bonnechere river. The heavily forested hills in the distance are typical of the rugged beauty of the countryside.

RENFREW—a collection of log huts on the trail from White Lake to Portage du Fort.” So runs a reference in an old post office directory, dated in the early 1800’s, which came to light recently in the Ottawa Valley area.

Yet from this small but picturesque beginning has emerged the Renfrew of today—a modern, vigorous town of 6,000 population, one of the leading industrial centres of eastern Ontario, and latest member of the great family of Hydro municipalities. Renfrew’s first local Hydro-Electric Commission was elected on January 1, 1945.

Situated on the Bonnechere river, 6 miles from its confluence with the Ottawa river, the town is 58 miles west of Ottawa by highway and 12 miles from the Quebec boundary by the shortest road route.

Possessing fine municipal facilities and industrial advantages, Renfrew is also served by the two great Canadian

railway systems. The town’s principal industries are creameries, flour and woollen mills, electrical and refrigerator plants, and heavy machinery manufacture influenced by the magnesium and graphite mines in the vicinity.

Name of Scottish Origin

Taking its name from Renfrew County, which in turn was named from Renfrewshire in Scotland, the town grew rapidly after the first traces of settlement in 1821. It was organized as a village in 1858, incorporated as a town in 1895, and expanded from a population of 4,400 at the outbreak of World War I in 1914 to 6,400 by 1918. But long before such development was even a dream, the Renfrew area was traversed by intrepid Champlain. Setting out on a canoe trip in the year 1613, hoping to reach the “sea of the north” (the Hudson Bay-James Bay region), the great explorer had to cross numerous portages along



A SECTION of the swift Bonnechere river, with one of Renfrew's two generating plants on the left, is shown in the illustration below. To the right may be seen the Renfrew Woollen Mills, one of the town's main industries. Note the picturesque cable suspension bridge linking both sides of the river.



AN ATTRACTIVE centre of Renfrew's civic life is the well-kept park shown here. In the background, to the right of the war memorial, is the modern public library whose records are an eloquent testimony to the town's well-developed cultural life.

the Ottawa. During one portage, he lost his astrolabe (an instrument which was the precursor of the sextant), forcing him to retrace many miles of his journey. In 1867, more than 250 years later, the astrolabe was turned up by a farmer ploughing new land at Cobden about 18 miles from the town of Renfrew.

Many Impressive Buildings

On a recent visit to Renfrew, Hydro News received a gracious welcome from J. B. Whitton, town engineer and manager of the municipality's Hydro system. Notwithstanding a heavy, all-day rain, Mr. Whitton conducted the H.E.P.C. party on a tour of the town, pointing out features of general and historical interest. Very impressive were the many fine schools, churches, hotels and public buildings, and well-kept residential streets and shops.

The rugged beauty for which eastern Ontario is famous is exemplified in the countryside surrounding Renfrew. At the north end of town, across the fast-flowing Bonnechere river, the landscape rises sharply into heavily wooded forest growth. A picturesque note is added by a sturdy cable suspension bridge, linking Renfrew's main street with the opposite side of the river. In a sense, the Renfrew area is a sportsman's paradise, for in addition to beauty of location, the numerous streams in the district are well stocked with fish.

During the present war years, Renfrew's industries have been called upon to meet large-scale demands for



SCENE IN the office of the Renfrew Hydro-Electric Commission. At the left is MARIE DEYELL, at right MRS. LILLIAN WALKER, both of whom are busily engaged in handling the utility's billing and office routine.

heavy machinery, military equipment, textiles and dairy produce. Among the leading industries are the Dominion Magnesium Company, 8 miles from town and one of the largest plants of its kind in Canada; Renfrew Woollen Mills; Renfrew Textiles Limited, Renfrew Electric and Refrigerator Co. Ltd.; Ottawa Valley Grain Products; Light Alloys Ltd.; Dept. of Mines and Resources (undisclosed war work); Renfrew Machinery Company, now building a large new plant in the town; H. Imbleau and Sons, founders, machinists and welders; and a number of co-operative creamery and poultry concerns. There has been a population increase of more than 500 during the present war, involving the construction of 100 new homes, mostly wartime housing units.

Old Established Journal

In the cultural and social sphere, Renfrew has contributed much to the welfare of eastern Ontario and Canada as a whole. Many of its churches are magnificent stone structures, their high spires visible for a great distance. The public library, a trim, modern edifice in the centre of town, faces one of the community's principal parks and plays a prominent part in civic life. A striking sight in the park is a large bandshell, erected a few yards away from the impressive war memorial. Renfrew's weekly newspaper, the Mercury, is an old, established journal of widespread reputation.

Renfrew has given a number of "native sons" to public



RENFREW MUNICIPAL offices, on the town's main thoroughfare. Part of the building is occupied by the municipality's Hydro-Electric Commission, now associated with the H.E.P.C.

life, including Hon. Dr. J. J. McCann, present Minister of National War Services; Hon. Thomas A. Lowe, former Minister of Trade & Commerce; and Hon. T. W. McGarry, former Provincial Treasurer; and Hon. Charles McCrear, former Ontario Minister of Mines.

For many years Renfrew has been a prominent name in athletic circles, and the old "Renfrew Millionaires" hockey team won many sporting laurels. The Renfrew County agricultural fair is the second largest in the Province and demonstrates the progressive farming spirit of the district.

Electric power has had a marked influence on the growth and industrial development of the town of Renfrew.



WELL OVER a century old, this old frame structure was the original Renfrew town hall. The stone annex served a less cultural role in olden days when it was a sturdy town jail.

Two generating plants and a power dam on the Bonnechere river, and 15 miles of distribution lines, have been operated by the town to serve its electric power requirements.

Electrical affairs in Renfrew, before the town became associated with The Hydro-Electric Power Commission, were managed by the Power & Light Committee of Council. In 1913, the municipality built a combined power plant, water treatment and pumping station, and in 1917 bought out a private power plant which had been built shortly after the turn of the century. Renfrew's total municipal load today is approximately 2700 horsepower, two-thirds of which are supplied by the town's own plants, the remaining one-third being obtained from H.E.P.C. facilities. The Renfrew Hydro utility serves 1500 domestic consumers, 225 commercial consumers, and close to 60 industries. The Hydro offices are in the town hall, with good facilities for the convenience of the public.

In addition to members of "The Hydro-Electric Commission of the Town of Renfrew," the utility has a staff of a line superintendent and two linemen; a power plant superintendent and seven operators; and two ladies in the office. Members of the Commission, elected by the public, are M. J. Sulpher, Chairman; I. H. Wright and James R. Barry, Commissioners. Town Clerk R. L. Kennedy acts as Secretary-Treasurer, with J. B. Whitton as manager.



To the Editor of Hydro News: I think your article on "War Birds" very interesting, but you don't explain how homing pigeons whose home loft is in Toronto can be taken to Nova Scotia or Vancouver and trained to fly in that area.

I think fellows like Bill Roberts who own good racing pigeons, loaned their breeders to the R.C.A.F. and bred young birds to be trained for the war work. The young birds then became the property of the government and the older pigeons were sent back to their original lofts. The usefulness and popularity of keeping homing pigeons has never waned. Even though man has made great strides in communication he still turns to homing pigeons when hurricanes tear down wires, planes become stranded and radios are silenced, for these birds can be counted on in any emergency.

Their loyalty, too, can be depended upon. They never turn against those who care for them and so great is their "love of home" that they return to it against staggering obstacles. Yet they are full of spirit and independence for if they are ill-treated they will fly away. Their needs are simple and they don't require expensive homes or food that is difficult to obtain. Only affection and kind treatment are essential, which means that anyone can raise them.

Pigeons are now trained to be two-way fliers. The technique of training them was introduced into the British army where the pigeons are known as boomerang birds. They proved their worth in the North Africa campaign. I understand only an hour-lesson a day is required to teach a pigeon to be a two-way flier. According to pigeon fanciers, all talented homing pigeons of the future will be able to master this trick and it will make them increasingly helpful in times of danger and emergency. And by way of showing their capabilities, there are now pigeons which have learned to fly in three directions. Starting for one objective, they stop upon arrival, fly for another designated point, after which they follow the age-old pigeon instinct and fly home.

For the present the method used in teaching a homing pigeon two-way flying is a military secret. Naturally this secret is shared by the homing pigeon! It is safe with them. Hundreds of years have passed since pigeons first carried messages. Yet through all these centuries and in spite of the experiments that have been made, no human being has ever discovered how the pigeons unerringly find their way home. The couriers of the sky came down to earth and became friends of man, they flew for him, they lived and died for him, but they have never revealed this great mystery. Perhaps it is the crowning peak of their fascination, for there is always something about them that remains unfathomable.—E. Awde, Property Department.

GRID SYSTEM BLESSING TO BRITAIN DURING BLITZ AND V-BOMB BARRAGE

Harold Hobson, Chairman of Central Electricity Board, Also Tells Of Plans To Develop 5,300,000 Horsepower In Old Land In Next Four Years

IN Great Britain where they think and talk in terms of kilowatts instead of horsepower, post-war plans include the completion of developments which will provide 4,000,000 kilowatts or over 5,300,000 horsepower in the next four years.

This was one of a number of interesting facts mentioned by Harold Hobson, chairman of the Central Electricity Board of Britain, during a conversation with the editor of Hydro News.

He also stated that damage to power plants during the blitz and V-bomb barrages had been much less than anticipated.

One of the large plants in London was knocked out when high explosive bombs were dropped, he stated. This plant, Mr. Hobson indicated, was about half the size of Hydro's Queenston station, and it was completely restored to service in 18 months.

In another case, the main switchgear of a plant was wiped out. A new switchgear was built on the public highway and partial service was restored in a couple of days and permanent supply in two weeks.

The Grid system, comprising some 5,000 miles of high tension transmission lines, the C.E.B. Chairman declared, had proved a blessing during the war. When a plant was damaged, power was always available to flow in from another plant. At the same time, he pointed out, that a pool of spare equipment costing £3,000,000 had been set up, and the equipment stored in various parts of the country.

Mr. Hobson, a tall, slim, distinguished-looking Englishman with dark piercing eyes and greying hair, is at present visiting this continent to renew "many pleasant and profitable contacts with utility people" and to ascertain at first hand what developments have been taking place on this side of the Atlantic. His visit is a flying one in every sense of the word for after stepping off a trans-Atlantic clipper at Baltimore early in June, he had renewed contacts in many United States cities before visiting the H.E.P.C. building in Toronto on July 5.

Set Up Grid Tariff

Now 54 years of age, Mr. Hobson, who succeeded Sir Archibald Page as chairman of the C.E.B. last year, is the son of the well-known economist, J. A. Hobson and is a B.Sc., graduate of King's College, London. He joined the Board in March, 1928, and as commercial manager was responsible for the setting up of the Grid tariff which is the basis of the Central Electricity Board's trading negotiations.

Modest but friendly, Mr. Hobson is the kind of man one would expect to meet on the playing fields of the Oval or Lords. In taking over the duties of chairman of the C.E.B., he assumed one of the most responsible posts in



HAROLD HOBSON
Chairman of the Central Electricity Board of Great Britain,
who visited Canada and the United States recently.

the British Isles and one which was particularly exacting during the war with Germany. He impresses one as a man who not only knows his job thoroughly, but who has a very clear conception of the major problems confronting Britain as she sets about the task of re-establishing her economic position.

The first problem which Britain has to grapple with is that of housing which he described as "a ten-year job." "Secondly," he said, "we have to get our feet back into the export market."

Mr. Hobson pointed out that Britain had been paying half the cost of the war out of direct revenue, and expressed the opinion that the Old Land, to avoid inflation, would have to maintain the present taxes, various controls and war savings drives "until enough men come back and we are far enough ahead with reconstruction and have some export trade."

Functions of C.E.B.

Another topic which came up was the functions of the Central Electricity Board. Mr. Hobson explained that in 1926 the board was given control over the entire country so far as generation and wholesale distribution of power were concerned. He made it clear that the C.E.B. had nothing to do with "the retail end of the business." There was another body, he said, known as The Electricity Commission—an arm of the government—which was responsible for making regulations for the safety of the public and which exercised some control over retail tariffs or rates.

The board's first job, Mr. Hobson continued, was to construct a Grid which is a complete high tension system, comprising some 5,000 miles of transmission lines, inter-connecting municipally-owned and private stations. These

(Continued on page 24)



JOHN E. BERRY, the dispatcher, has called a patrol car and awaits acknowledgement before giving instructions. Over his shoulder CARL SCHWENGER, distribution engineer, scans the daily log.

LAST winter will long be remembered in Toronto for its snow storms. During one of the worst of these, when a howling north-east wind piled drifts on the streets as high as a fence and sharpened the customary 24 hours' vigil of Hydro linemen to the keenest edge of alert expectancy, no less than 400 emergency calls were received by the Toronto Hydro Electric System.

Under the old system of despatching it would have been impossible to have looked after such a flood of trouble with the promptness that a big modern city engaged in important war work might almost seem to demand. The two-way radio control just installed by the Toronto Hydro met the situation with an efficiency that probably few citizens paused to consider. The instantaneous communication effected between headquarters and the patrolling emergency cars eliminated unnecessary driving through snow-drifted streets and enabled the repair men to get down to work in a fraction of the time that would formerly have been required.

Two-way Control-FM System

Believed to be the first in Canada in the electrical utility field, this new two-way control inaugurated by Toronto Hydro marks another advance for radio communication methods in metropolitan areas. It obviates vexatious delays and saves valuable time. Within a few minutes after trouble has been reported a patrol car can be on

the scene and repair crew at work. And this applies anywhere in the city of Toronto. In fact, the system is efficient within a radius of fifteen miles of the centrally located headquarters on Carlton Street.

Two-way radio communication is based on well-known principles of transmission and reception. But theory has to be adapted to practice. It was the job of C. E. Schwenger, distribution engineer of the Toronto Hydro, to work out a system that would correspond to special and local needs. After careful planning, he began to look for weak spots. Patrol cars were driven into basements, parked among the steel girders of buildings under construction, run under ramps, power lines and transformer banks—stopped here, there and everywhere to invite static and interference. There weren't any—neither in the control room at headquarters nor in the installation of the vehicle under test. The job stood up to everything demanded of it.

Simplicity of Operation

The control installations for the two-way radio communication system are located at the top of the Toronto Hydro building on Carlton Street. The remote control unit is on the seventh floor. It consists of a table-type console model housing monitor, loud speakers set for a one-wave length, a meter for the transmitter, pilot lights to indicate when transmitter and receiver are functioning, receiver squelches to give tone clarity, volume controls and a power



SEEN FROM the bottom of the Toronto Hydro-Electric building, the tower and antenna of the two-way radio communication system, seem to spire into the clouds. The antenna is charged with nitrogen to assist conductivity.

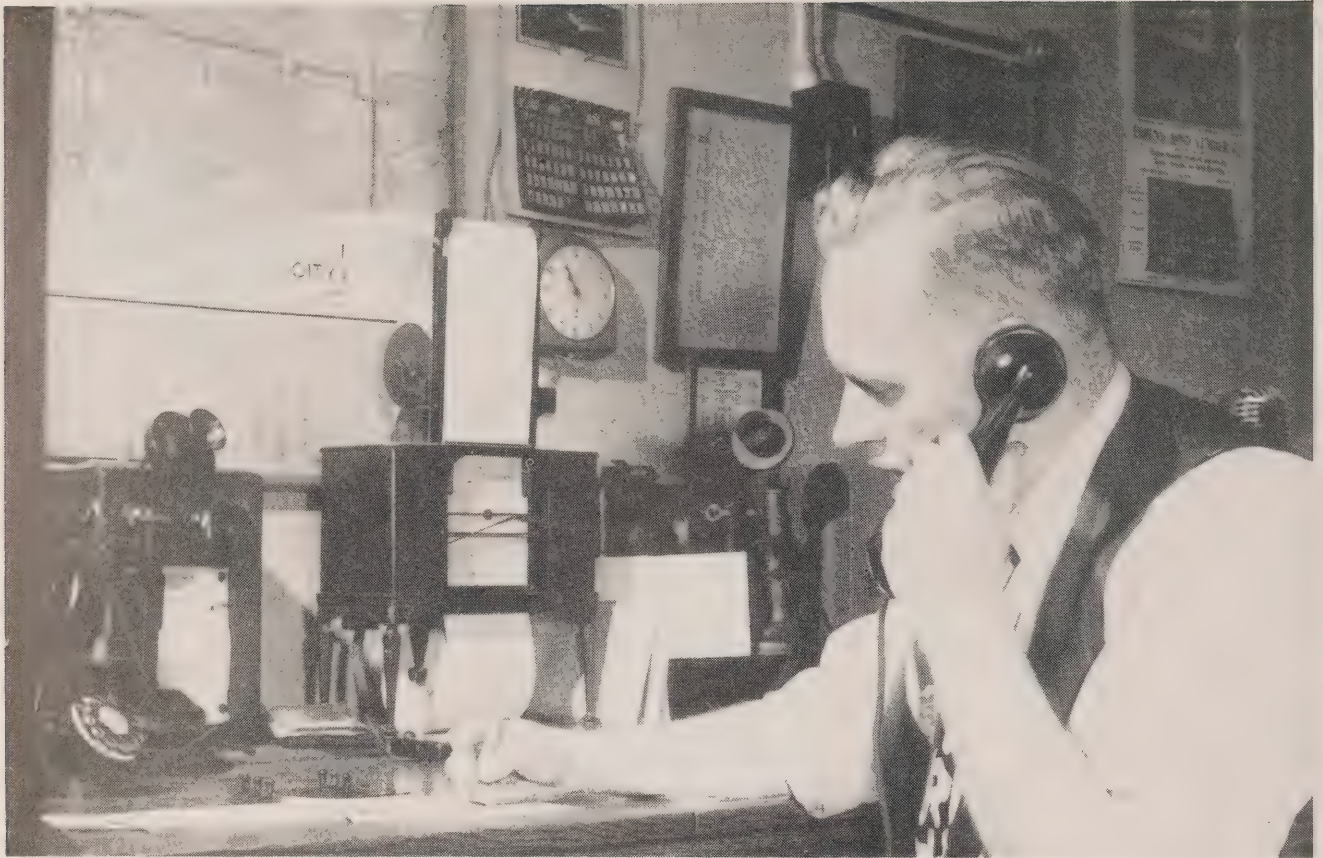
switch. The microphone is of the aircraft type, provided with a "push to talk" button.

"The outstanding feature of this system," George Nye, of the Toronto Hydro System, pointed out to Hydro News, "is simplicity of equipment. One despatcher has within his reach all the controls and facilities for handling records and despatching service trucks."

As Mr. Nye was speaking, a telephone call reporting

service difficulty came in and was recorded on the daily log, the call being duplicated on the telautograph for tabulation in the Scott Street trouble centre some ten blocks away. The opportunity was thus afforded Hydro News of witnessing a practical demonstration of despatching procedure.

The despatcher on duty, Ivor Ellis, at once made a



A TROUBLE call is received in the dispatcher's room at head office. On the desk are fire alarm controls, duplicate switchboard for night service and the telautograph which records the message—all within easy reach of the operator.

broadcast to a patrol car in the vicinity of the trouble, the identity of the vehicle being determined from the daily log.

"C-F-Three-H calling car twenty-nine—C-F-Three-H calling car twenty-nine—Come in, please—Over."

Car twenty-nine identified itself, received instructions, confirmed them, signalled off, and proceeded to its "trouble" destination.

Checked For Accuracy

Certain regulations drawn up by the Department of Transport of the Dominion Government apply to all wireless broadcasting in Canada. The 250 watt output of the Toronto Hydro station and the frequency of 38.7 megacycles must be checked for accuracy at stated intervals, Mr. Ellis explained. All broadcasting must be limited to the business in hand.

The Hydro News man was shown up a ladder to the penthouse where Mr. Nye identified the different sections of the transmitter. An independent generator, on one side of the transmitter, supplies the required voltage. Tanks on the other side contain nitrogen which is fed into the coaxial antenna to increase conductivity and prevent leakage.

Mr. Nye opened the door of the transmitter. The

generator stopped immediately.

"That," smiled Mr. Nye, "is just a safety measure to ensure repairs or work on the transmitter being effected without hazard to the men involved."

On the roof of the building, the tower and antenna, used in both sending and receiving, rises to a height of 85 feet from the penthouse on the roof of the Carlton Street building. The construction of the tower is a regulation steel lattice design, with guy wires for wind resistance anchored by eye-bolts embedded in concrete.

On 24-hour Schedule

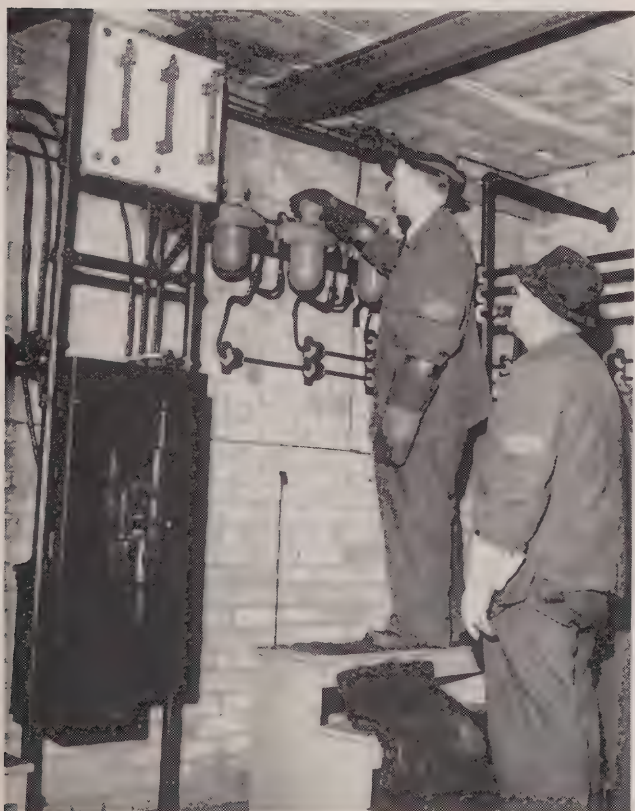
Seated on the parapet of the roof, Mr. Nye discussed the difference between amplitude modulation and frequency modulation in radio broadcasting. In the case of F.M., which is being used by Toronto Hydro, the wave has regular limitations and reception is, therefore, free from static. The A.M. curve, on the other hand, Mr. Nye explained, has irregular extremities called "spill" which cause static interference.

Later, Hydro News called at the Scott Street garage where the patrol cars are based. Operation of the two-way communication is on a 24-hour schedule. If necessary, as

(Continued on page 22)



JACK LONERGAN, driver of the patrol car and AL BRIOUX, with the "mike," are receiving instructions. The radio apparatus on a shelf in the body of the truck can be replaced with a spare if an overhaul is necessary.



IN THE basement of the Medical Arts Building, AL LONERGAN replaces the cap on the transmission fuse where the trouble was located. He is wearing double safety gloves as a protection against possible shock and injury to his hands.



A SYSTEMATIC trouble check is made at the Medical Arts Building as AL BRIOUX tests a primary supply fuse on the distribution line, while JACK LONERGAN stands by in case a replacement should be necessary.

C-F-THREE-H CALLING



AT THE Scott Street trouble station an emergency patrol man on duty checks the report made by the repair crew with the telautograph record of the trouble call. By this means a complete and accurate case report is obtained for all calls. The movements of the patrol car, the location and nature of the trouble investigation, the time taken in effecting the repairs and the material expended are all made a matter of permanent record which can be referred to at any time.



GEORGE NYE, radio maintenance man, checks a faulty tube in the transmitter located in the pent house at Toronto Hydro headquarters. Sections can be replaced in a matter of seconds if an occasion demands. The generator stops immediately the door of the transmitter is opened. This is a safety measure to ensure repairs or work on the transmitter being carried out without hazard to the men involved.



FROM THE Medical Arts building, seen in the background to the right, a trouble call has been received by the dispatcher at Toronto Hydro headquarters. The newly installed radio communication will enable a patrol car to be on the scene within a few minutes. Patrol crews are furnished with all the necessary equipment to effect any adjustments or repairs arising from "local" trouble. All repair men are, of course, provided with rubber gloves which have been rigidly tested in the H.E.P.C. laboratories.

HYDRO'S FIVE-YEAR RURAL PLAN TO HELP HANDICAPPED FARMERS

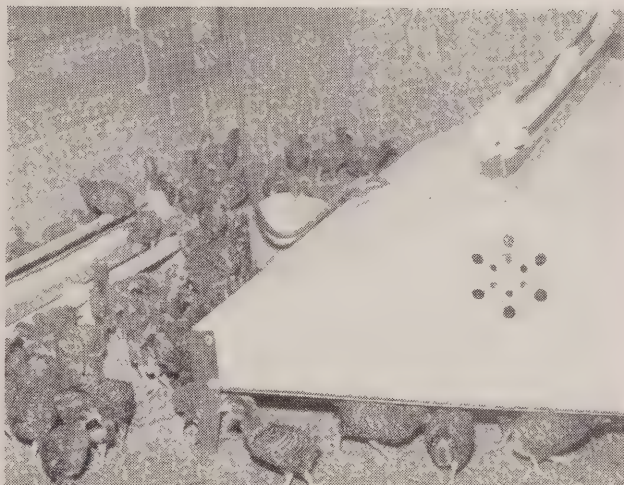
THERE are still districts in the Province of Ontario where farming is carried on under definite handicaps. Before going out to the fields in the morning and on his return at night, many a farmer has to perform important chores by sheer physical labour in the restricted light of an oil lamp or in the glimmer of a stable lantern.

Reports on the five-year plan for rural electrification in Ontario herald better days for these handicapped farmers. As soon as wartime priority restrictions on material have been lifted and labour and other conditions permit, The Hydro-Electric Power Commission of Ontario will launch its plan for more extensive rural development.

Previous Development

Of course, rural electrification in this progressive province is no new thing. It got off to a really good beginning with the assistance of provincial legislation enacted in 1920 and 1921. Under what was known as the "Rural Power District Scheme," the province was divided into districts of about one hundred square miles each. Every district was operated as a unit by the H.E.P.C. and rates were adjusted from time to time on an "at cost" basis. Rates to farmers were made upon the basis of a fixed service charge, plus a variable charge for the amount of energy in kilowatt hours used. The individual consumer's load or demand for power, and the size of his farm determined what was known as the "class rating," and this in turn determined his service charge. When the rural power districts were first set up, the monthly service charge for the average farm was \$6.20 net per month.

By the end of 1926, 2,000 miles of rural line had been constructed. Between 1926 and 1931 the march of rural



TESTS HAVE proved that electric brooders make for healthier and faster-growing chicks. These chicks are enjoying the benefits of a "hover-type" brooder which provides an even heat under all temperature conditions.

Hydro was very rapid, 8,000 miles of distribution line having been built in that period alone. Then came the "Great Depression," and development was retarded by the equivalent of three years, considered in terms of normal construction. In the period before the war and on into the first two years of hostilities, the rate of rural development was again accelerated. In 1942, however, wartime restrictions on the use of electricity were imposed and further progress apart from the building of some absolutely necessary distribution line for which government concessions were granted, was held up.

Figures show that by the end of 1944, 21,045 miles of rural line had been built by the Commission and that Hydro service had been made available to 61,486 farms. This represents about 55 per cent of possible consumers in the agricultural category. The extension of rural lines has been accompanied by continuous reduction in rates. In January of last year, with the amalgamation of all Rural Power Districts into one Provincial Rural Power System, the farm service charge was abolished, and new uniform rates for all classes of rural consumers were introduced.

The Five-Year Plan

The five-year plan is designed to pick up the threads and carry on with further rural development according to a well considered scheme to bring the many benefits of Hydro to as many farmers and rural consumers as possible. It is estimated that during these five years of systematic



THESE LITTLE pigs find their brooder a warm and comfortable place and even mother looks as if she'd like to get inside. An ordinary electric bulb and reflector provides a healthy, even heat.



MUCH INTEREST has been aroused by the striking and appropriate Victory Day window display (above) designed and dressed by Eric Parsons, Sales Manager of the Hydro in Sarnia. At such a time there could be no more fitting tribute to the Canadian fighting men who have given their lives in this war, than this representation of the tomb of an unknown Canadian soldier beside a stone wall somewhere in Normandy. The

grave is covered with poppies; to one side there is a card with a list of battles in which Canadians have taken part and at the front of the window there is this epitaph:

*"Rest in peace under the beautiful sky
Son of Canada and glorious martyr,
You have given your life for the deliverance of mankind,
May your name be forever blessed in Heaven."*

FIVE-YEAR RURAL PLAN

(Continued from previous page)

construction, 7,329 miles of new rural distribution line will be built, bringing Hydro service to approximately 58,000 new rural customers, of whom 32,000 will be farmers—a greater proportion than in any previous development in the rural field over a similar period of time.

Plans formulated by the Commission show how the construction work will be spread out over each year of the five-year period, and also the approximate number of farms that will receive Hydro service each year. At the end of the construction period it is estimated that 85 per cent of the total rural population and about 83 per cent of the farmers in Ontario will enjoy the advantages of electricity.

Material Required

In carrying out this plan, it is estimated that 220,000 poles will be required. If previous practice is adhered to these will be of pine or cedar. To meet the exacting requirements of line construction they must be fashioned of sound and mature wood. Good timber stands are being sought continually and, on many occasions, the Commission has found it necessary to go as far east as New Brunswick and as far west as British Columbia for the right kind of timber. The poles used by Hydro have to be protected against the weather and the attacks of parasites. Cedar

weathers very well, and the poles are usually given just a butt treatment as they are placed in the ground. In the case of pine, a creosote impregnation treatment under-pressure is applied to the whole pole.

In addition to these vast quantities of poles and thousands of miles of copper wire, the five-year plan will call for 38,601 new transformers, 57,904 new meters and a similar quantity of breakers.

Employment of Labour

The five-year plan initiated by the Commission will result in a very considerable employment of labour spread over a wide range of tasks. These will involve full-time work and part-time work both directly and indirectly associated with the carrying out of the plan. Apart from actual construction, there will be re-wiring, the manufacture, distribution and installation of electrical appliances and farm equipment, and many other auxiliary jobs.

The total work entailed within the full range of the plan's objectives is estimated at 26,231 man-years, or an average of more than 5,000 man-years for each year of the development.

The actual number of people benefiting by employment through the programme, especially when families and dependents are considered, will be much greater than the figures suggest.



Hydro HOME FORUM

by *Edithemma Muir*

HOME ECONOMIST

Sun-soaked days, hot nights, the fragrance of ripening crops—August. And that means it's time to get ready for canning. In this connection, we would like to answer some of the questions that have been asked during the past week.

A: Delicious flavours may be made in canned fruit by combining about a half-measure blueberries, or add a little vinegar for character; when canning peaches, crack a stone and add two or three kernels to each jar; stick a few whole cloves into each pear half or add a sprig of mint; plums can take nicely to the addition of a few grains of ginger.

* * *

B: The recommended method of home sterilizing of canning equipment is important. Wash jars and tops in warm, soapy water. Rinse. Invert jars in two inches of water in a pan: the dishpan will serve. A cake cooling rack placed in the bottom of the pan will prevent the jars from bumping. Immerse spoons, knives, etc., to be used in canning. Boil ten to twelve minutes. (Dip rubbers in hot water for a minute before using.)

* * *

C: To prepare enough liquid allow two cups of syrup for each quart jar of large fruit or one cup for small fruit. One and a half cups of sugar and three cups water make three and a half cups thin syrup.

* * *

D: Electric Oven Canning. Adjust oven shelf about 2 or 3 inches from the bottom element. It is best to place a cookie sheet or jelly-roll tin on the

lower shelf. There will be an even circulation of heat and any juice that may boil over will not burn on the bottom of the oven. Preheat the oven to 275 degrees and set control to "Bake", or bottom element "On". Place the jars so that there is an inch of space around each jar. An electric oven will hold about 12 pint jars. Calculate processing time as soon as temperature has again risen to 275 (about 15 minutes) then remove jars, complete seal and place upright to cool. Label and store in a dark, cool place.

HINTS FOR HOMEMAKERS

1. Chopped or ground meat spoils more quickly than meat in the piece. Spread on wax paper, cover with a sheet of wax paper and keep it directly below the freezing unit of the electric refrigerator. Use it up soon.

* * *

2. There's an enzyme in raw pineapple which destroys the setting quality of gelatine. Scald or cook the fruit and juice before using it in jellied desserts and salads.

* * *

3. A standard sandwich loaf cuts into from 40 to 50 $\frac{1}{4}$ inch slices. A long loaf yields about 80 thin slices.

* * *

4. We used to say, "Use day old bread for fancy sandwiches" but if you chill fresh bread for 2 or 3 hours in the electric refrigerator it slices easily and the resulting sandwiches are better for being fresh.

* * *

5. Wise use of herbs and spices is about the easiest and cheapest way to

get variety into your cooking. Mint, thyme, sage, marjoram and other fragrant herbs from your victory garden may be picked in their prime and dried for seasonings.

* * *

6. A pound of cheese makes approximately $4\frac{1}{2}$ cups when grated.

* * *

7. A $5\frac{1}{2}$ to 6 pound chicken will serve about seven people. Or it will give you about $4\frac{1}{2}$ cupfuls of diced chicken meat for salad or chicken a la king.

* * *

If the tab comes off the end of a shoestring, coat the string with clear nail polish, one quarter inch from tip. Let dry thoroughly and the string laces as easily as ever.

* * *

Large-top glass jars help protect our small woollens from moths and dust and make them easy to identify. Of course first launder or dry clean them and spray with moth-proof compound. This summer our garment canned-goods shelf will look like this: brother's wool ties, scarf, fur-lined gloves, sister's parka, scarf and wool ski socks. And next fall the same jars will hold brother's and sister's swimming suits and the tennis socks.

HOW TO STRETCH BUTTER

Cream butter to the "whipped" stage as you would for cake batter. Creaming it in the electric mixer extends its volume even more. Add one-half cup of warm milk or water and beat to the fluffy stage. A pound of this mixture will spread 3 one-pound loaves.

USED HYDRO CURRENT TO ELECTRIFY FENCE

**Charge Laid And Fine Imposed When Dog
Electrocuted — Dangerous And Strictly
Prohibited, Declares Commission's
Sales Control Inspector**

NOW and then reports reach The Hydro-Electric Power Commission of Ontario of accidents resulting from the careless use of defective and worn-out electrical equipment. Less frequently Hydro inspectors are called upon to investigate cases where there has been a direct transgression of the law by consumers.

According to press reports, one of these cases occurred recently in the Gananoque district. A prosecution was brought against a resident, who, it was alleged, had connected Hydro power with a wire fence, apparently for the purpose of keeping stray animals off his property. A terrier dog was electrocuted, and after investigation by the police and the Hydro inspector, a charge was laid by chief of police Reginald Morrison. A fine of \$25 and costs was imposed, and a settlement out of court was made between the owner of the dog and the defendant.

In the course of the proceedings it was pointed out that the electrification of fences by connecting them with power lines was an extremely dangerous proceeding and might easily endanger the lives of human beings—especially unsuspecting children. The Commission's rules and regulations governing electrical installations and equipment prohibit the use of Hydro current for this purpose. Most of the lines in rural communities carry 110 volts, which is quite sufficient to cause death; indeed, under favourable conditions of conductivity, a very much smaller voltage may produce fatal results.

Accidents to Children

In the current issue of the News Bulletin, published in Chicago by the International Association of Electrical Inspectors, the death of a six-year-old boy from contact with an electrified fence is recorded. The Bulletin's correspondent remarks: "This was just a home-made contraption, with a 60-watt bulb in series and a hot wire connected with the fence wire. So you see it is not an approved device."

Another accident is reported on a farm where a fence was connected to a 110-volt line, using a 7½-volt bulb as a resistor. Two of the farmer's sons were playing near the fence, and one dared the other to touch it. Immediately the boy was "frozen" to the fence and rendered helpless. The brother, fortunately, had enough presence of mind to run to the switch and disconnect it, thus avoiding a tragedy.

These reported incidents prompted Hydro News to ask H. J. McCaw, sales control inspector of the H.E.P.C., just what might be an approved device for electrifying fences.

Use of Power Line Current Prohibited

"There are no approved Hydro devices for connection to power circuits," Mr. McCaw hastened to explain. "The use of current from power lines for the purpose of electrifying fences is strictly prohibited. On some farms in Ontario,

however, where livestock is kept, battery operated equipment is used to keep animals from breaking through fences. A 6-volt current is obtained from batteries. This is ample to discourage any refractory steer from misbehaving itself. In fact, it is such a potent preventive medicine that once an animal has experienced a dose of it, it is generally wary about coming back for more."

Battery operated fence controllers, Mr. McCaw added, are not considered hazardous, although they do give a stiff shock, and, therefore, do not require the approval of the Commission.

POSSIBLE TRAGEDY AVERTED BY THREE HYDRO EMPLOYEES

Because of their knowledge of first aid, three Hydro employees, **EDWARD** and **KEITH SUTTON** of Peterborough, and **CHARLES COLLAND**, brother-in-law of the Sutton lads and an operator at Frankford, were able to avert a possible tragedy on June 24.

The incident occurred opposite the Seymour generating plant at Campbellford where Donald Douglas, aged 19, of Peterborough, dived into the canal and failed to come up. The other swimmers could see him on the bottom in approximately 12 feet of water. They had considerable difficulty getting him out and by the time they did, he had been in the water not less than ten minutes and possibly as much as 20 minutes. Out of the crowd present, only the three Hydro employees knew anything of resuscitation and they began to work immediately. Telephone calls were put in to all other available Hydro men to come and help. Dr. Ward Baker of Campbellford was called. The following Hydro employees reported and assisted with resuscitation: **ADAM YEARWOOD**, **SIDNEY HOPPING**, **SAMUEL FLINT**, **HAROLD MacDONALD** and **RUSSELL LONG**. The original three men worked for some time and Douglas had started to breathe when further help arrived.

C-F-THREE-H CALLING

(Continued from page 16)

in the case of a road emergency, vehicles can contact each other. When sending or receiving from a car or truck there is an output of 30 watts. It was necessary, on this account, to replace the standard automotive generator in all patrol cars with an over-sized air-cooled model.

Toronto Hydro maintenance and repair men are pleased with their new equipment. This new two-way radio communication has given them the satisfactory feeling of always being "on top" of their job. Every move they make is definitely purposeful; and with an average of 30 to 40 calls a day, there is no carry-over of unfinished business for the next shift. From an economical point of view, gas and tires are conserved by the elimination of long and tedious trips. The consumer benefits too, by better service.

At the Shows



J. J. TRAILL, president of the Hydro horticultural club, (right) and C. E. Chapman are looking over the fine display of iris. At the left are a prize-winning basket of iris and other spring flowers.

Two surprisingly successful flower shows, considering the adverse weather of spring and early summer, were held last month by the Hydro Horticultural Club. The iris show on June 13 broke all previous records in the number of entries and in the quality of exhibits, while the rose and peony show of June 28 compared quite favourably with the exhibitions of the past.

A spacious room in the administration building of the H.E.P.C. at 620 University avenue, was provided for both shows which included attractive displays of early garden blooms.

The iris lends itself ideally to blending, and the delicate nuances of colour that can be attained by careful crossing were strikingly manifest in the exhibition devoted to this popular flower.

The services of F. E. Sillifant, a local authority on iris, were secured for the judging, while the club was indebted to Dr. E. H. Craigie for a special exhibit of newly developed iris varieties. The show was directed by W. H. Carr.

In the rose and peony exhibition there were many beautiful blooms. The display of red roses was particularly fine, while the double red, pink and white peonies were very imposing and made a magnificent display at the end of the room. Mrs. A. A. Gow did the judging, and the

show was directed by E. V. Butt.

No less than 138 entries—an all-time record—were exhibited at the Iris show, and in the rose and peony show there were 89 entries. The winners in the different classes of both shows follow:

Iris show—H. Leeming, 3 firsts, 1 second; H. R. Hill, 1 first; E. Shulver, 1 first; H. E. Brandon, 4 firsts, 2 seconds; J. C. Murton, 4 firsts, 3 seconds; W. H. Carr, 3 firsts, 1 second; J. F. MacLaren, 2 firsts, 1 second; Miss M. Evans, 1 first; A. H. Frampton, 1 first; D. Forgan, 1 first; J. H. McTavish, 2 seconds; A. B. Hayman, 1 second; O. Mitchell, special mention. Best iris in show, W. H. Carr; sweepstake winner, J. C. Murton; runner-up, H. E. Brandon.

Rose and peony show—roses: T. C. James, 3 firsts, 1 second; F. R. Gregory, 1 first, 1 second; H. E. Brandon, 1 first, 2 seconds; A. Kenardy, 1 first, 2 seconds; W. H. Pomeroy, 1 first, 1 second; N. S. Haines, 2 firsts, 1 second; W. H. Carr, 1 first, 3 seconds; J. F. MacLaren, 2 firsts, 3 seconds; H. L. Wagner, 3 firsts, 3 seconds; O. Kleiser, 1 second; A. H. Frampton, 1 first and special mention for table centre-piece. Best rose, J. F. MacLaren; best peony, H. L. Wagner; best basket, J. F. MacLaren; sweepstake winner, H. L. Wagner; runner-up, J. F. MacLaren.

AT THE SHOWS



HOW THE girls go for champions! And they certainly went for this blue ribbon peony. Gathered around this exquisite flower and reading from left to right are Ada Becker, Wanda Butts, Ruth Lewis and Stella Howith.



"THE FLOWERS that bloom in the spring" attracted much attention at the iris show held by the Hydro horticultural club. Admiring some of the early blooms are Loretta Murphy, Shirley Stevens and Sally Sheppard. (Left to right, gentlemen, please!)



WHILE A little late this year, peonies did very well in most city gardens. This prize-winning basket displayed at the Hydro horticultural club's show contains blooms that any grower anywhere might well be proud of.

GRID SYSTEM BLESSING

(Continued from page 13)

stations are known as "selected stations" and today there are 141 of them which together with 35 smaller stations controlled by the board under agreement produce over 95 per cent of the electricity in the country.

"We own, operate and maintain the transmission system but we do not own any generating stations with the exception of one which was built during the war," continued Mr. Hobson. "The generating stations continue

to be owned by the municipal and company authorities who built them. We can give directions which are mandatory. If we want a new station built we have to make the arrangements to have that station built. The owners of these stations have to produce as much energy as we order. We have regional and national load despatchers. The whole of the energy produced by them is sold to us and we pay the actual cost of production, interest on the capital investment in the station and provide for depreciation."

Developments in Scotland

At the present time, there are 500 odd distributing authorities in Great Britain, but the set-up is not regarded as technically satisfactory. Retail rates or tariffs, usually include a fixed annual charge plus an energy charge ranging from 1 to 3 cents per kilowatt-hour.

Mr. Hobson next touched upon hydro developments which are proceeding in Scotland at present. In 1942 when the supply of coal loomed as a major problem, Parliament set up a committee to consider where hydro resources could be economically developed and to advise on how the development should be undertaken.

As a result of the report of that committee, Mr. Hobson stated, the North of Scotland Hydro-Electric Board was set up by Act of Parliament and four members to the board were appointed by the Secretary of State for Scotland and one by the Central Electricity Board. Survey work is now proceeding and it is estimated that about a million horsepower of hydro power can be developed in Scotland.

With very few exceptions, Mr. Hobson stated, the people of Britain use electricity for lighting and other purposes and future plans provide for further extensions to rural service.



HYDRO MAN GIVES ALARM IN RED LAKE HOTEL FIRE

When fire broke out in the Red Lake Hotel recently, night Hydro operator Dan Mills communicated with H. A. Schade, assistant superintendent of Canadian Pacific Airlines at Sioux Lookout. In a matter of minutes operators at Sioux Lookout, Kenora, Lac du Bonnet and Red Lake were arranging to bring assistance. George Morley of the Commission's construction department was staying in the hotel at the time. He escaped injury although he lost everything he had with him but his money.

RENFREW COMMISSIONER

JAMES R. BARRY, mayor of Renfrew for the past five years and ex officio member of the local Hydro Commission was born in Barryvale and educated in Ottawa.



His career in municipal politics began as a councillor and subsequently he served for a period as reeve. At one time he operated a dairy in Renfrew, and as a practical farmer he has always been closely associated with the agricultural interests of the district. It is interesting to note that the property acquired by the H.E.P.C. for the development at Barrett Chute was at one time owned by Mayor Barry's grandfather. The mayor is well known

as a nimrod and asks nothing better than a day off with rod or gun.

ACTIVE IN CIVIC AFFAIRS

HOWARD WRIGHT, member of the Renfrew Hydro Commission since its establishment last January, is a native son of the town. He has played an active part in civic affairs as member of the town council in 1933, 1934 and 1944 and as chairman of the Light and Power Committee in 1944. He comes naturally by his interest in electricity for his father, A. A. Wright, merchant and M.P. and pioneer of the district, established the first electric light plant in Renfrew. By trade Mr. Wright is a contractor. He knows



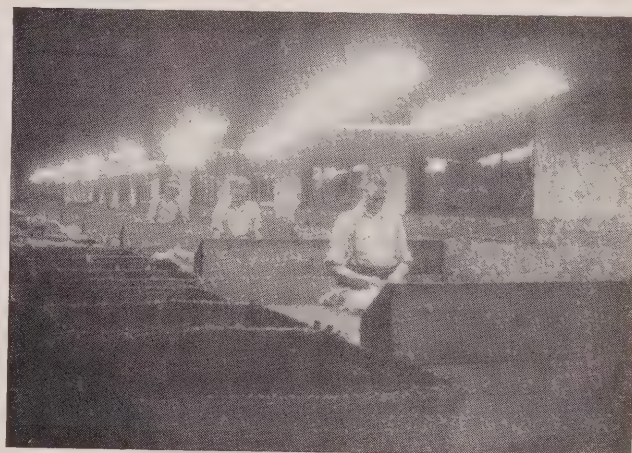
how to make good use of his spare time and two of his hobbies are hockey-playing and inventing mechanical devices. Another hobby which has become a successful commercial proposition is bee-keeping.

LIGHTING AND WOOL SORTING

GEORGE G. COUSINS, the Commission's supervising lighting engineer, is credited as "the man responsible for the first successful illumination of the wool sorting room."

Previous attempts at sorting wool under artificial lighting were not satisfactory because, as Hydro News was informed, it changed the appearance of the wool so that the sorter was unable to appraise correctly. There are, it was pointed out, about fifty grades which have to be sorted and each has to be placed in its own hamper, in one movement, according to size, texture and colour.

Mr. Cousins set up experimental lighting over the benches taking into consideration such factors as lamp position, illumination intensity, diffusion and any adverse effect of glare. He achieved a solution that was rigorously tested and finally approved by the management.



SORTING IS not restricted to post offices. For instance, the sorting of wool is a skilled operation demanding correct illumination. This illustration shows a general view of a sorting room, in a woollen mill.

Preliminary studies revealed that the lowest intensity of daylight that was considered adequate for satisfactory sorting was 75 foot-candles. On quite an appreciable percentage of the normal working hours, the daylight was much below this rating, particularly during the winter months when the demand for wool is greatest. By experiment, an arrangement of two-lamp, 40-watt fluorescent lighting was found to give satisfactory results, the illumination intensity on the benches being about 125 foot-candles.

Prior to the general adoption of fluorescent lighting, the sorting of wool was frequently limited to late morning and early afternoon hours.



"Anything I can get you? A cup of coffee, magazine, a cruller, maybe?"

* * *

Man on this continent is increasing in stature at such a rapid rate that scientists confidently expect the average North American, in another hundred years or so, to be well over six feet in height, while individuals with a vertical range of eight feet or more and broad in proportion will be no uncommon sight. It is pointed out, however, that the skin will be under some strain in accommodating itself to this step-up in bone and muscle. It is rather disquieting to think that when our descendants have attained the stature of supermen, they may be too "tight" to function effectively.

* * *

Members of the Nazi underground describe themselves as "were wolves." Apparently there are still some Germans who suffer from the delusion that "we're sheep."

* * *

Judging by the displays of this summer's bathing fashions in the stores, the fair sex will take to the beaches banded like honey-bees. Is this to be taken as a sign that men are now definitely regarded as merely drones?

A soothsayer predicts that the millennium will begin in the year 3000. Most of us are counting, though somewhat apprehensively, on being removed to a better place long before that.

* * *

When a heavy shower of rain swept the Hamilton race course on Dominion day, some of the fair turf fans who were driven from the infield are reported to have taken off their shoes to cross the sloppy track. The covered stands are said to have "rollicked with merriment." Probably even the stables he-hawed with horse laughs.

* * *

Sambo was arraigned on a charge of chicken stealing. The judge leaned over the bench.

"You are the accused in this case?" he asked the prisoner.

"I sure am, your honour," replied the coloured man. "I've been abused ever since I stole dose chickens."

* * *

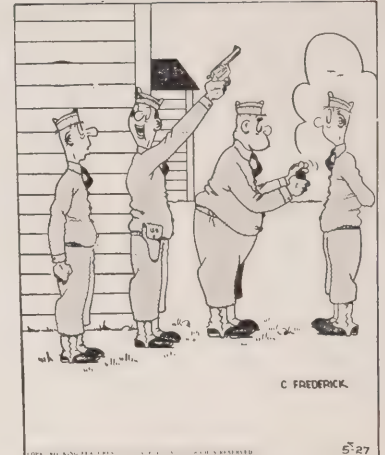
Oh, northern skies are passing fair,
And northern air is keening;
But "skeeters" meet you everywhere
Lest joy become o'erweening.

* * *

DOWNWORDS PUZZLE

(Last Month's Solution)

1	2	3	4	5	6	7	8	9	10	11	12
R	A	G	E	D	R	A	P	I	D	S	
A	S	E	I	L	R	A	L	R	N	I	T
P	P	O	L	I	O	T	L	U	T	P	O
S	T	R	A	Z	M	T	E	S	E	S	R
C	R	G	M	A	E	L	G	S	R	O	Y
A	A	I	O	B	D	E	O	J	A	M	T
L	T	U	N	E	A	S	R	A	L	A	E
L	I	S	S	T	R	N	I	N	L	N	L
I	O	R	T	H	I	A	C	I	I	L	
O	N	E	E	A	E	K	A	S	E	A	E
N	S	X	R	N	S	E	L	M	O	C	R



"S-h-h-h! Is this going to be funny when he yanks the pin out of that demonstration hand grenade!"

* * *

A new recruit from a remote country district was a week at squad drill before he saw the first commissioned officer. Then, it happened to be the battalion commander.

As the man failed to salute, the C.O. asked rather sharply: "Don't you know who I am?"

The recruit looked him up and down and began to grin.

"Oh, I know. You're the guy who works over in the office. Say, fellow, the sergeant-major has been looking for you all morning. You're a-going to catch hell."

* * *

Many Hydro employees, it is reported, have taken up horseback riding. Some have reached the stage where they have acquired the riding habit.

* * *

A fisherman sleepily trolling
Felt his boat give a terrible rolling.

He caught at the line,
But the fish snapped the twine
And left him with thoughts past controlling.

[illegible]

ALL work and no play makes Jack a dull boy. Professor Peter Perplexus takes occasion to wish all Downwords fans a very enjoyable vacation this summer—and he has a very special greeting for fishermen in this month's puzzle. It should be a nice little bait for rainy days, and if the definitions are closely studied, it should not be particularly difficult. Mindful that the disciples of old Isaac Walton rarely carry a dictionary in their piscatorial ramblings—or anglings—the professor has not introduced any words that are beyond the range of an average fisherman's vocabulary.

And now off to Cameron Falls where one of the best-groomed power plants in the H.E.P.C. system is located. This station is right in the heart of a district where the big trout really take the fly and like it. So let's go.

DEFINITIONS

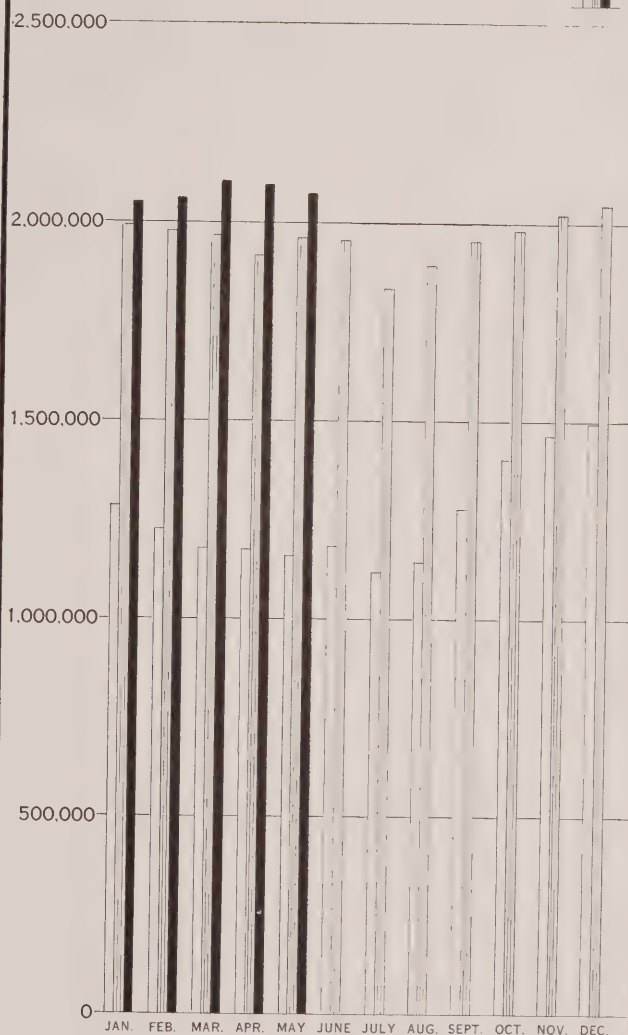
1. Many fishermen in the maritime provinces and Newfoundland are engaged in these enterprises. (2 words)
2. Expectancy. Will it be the biggest fish you ever caught?
3. Fishermen who have the time and money to go to Florida for tarpon, to South America for barracuda and to Australia for sharks.
4. This gives expanse and romance to every fisherman's tale.
5. Optimistic fish. Their lively suggests that it isn't going to rain any more. (2 words)
6. When the nerves of big executives get this way a fishing trip is in order.
7. Nip-nip-nip-nip. There's only one river where they come that fast. Speckled beauties, too. (2 words)
8. A favorite restaurant fish with its bones removed. (2 words)
9. 66° 32' north—the limit of the average angler's happy hunting grounds. (2 words)
10. A kind of black bass.
11. Summer holidays for the law courts and the universities. (2 words)
12. Sources of caviar (2 words)

(FOR LAST MONTH'S SOLUTION SEE PAGE 26)

SOUTHERN ONTARIO SYSTEM

EMBRACING NIAGARA, GEORGIAN BAY AND EASTERN ONTARIO
DIVISIONS

Year	Horsepower (approx.)
1939	~1,000,000
1944	~2,000,000
1945	~2,500,000



PRIMARY LOADS

AREA SERVED BY	MAXIMUM 20-MINUTE PEAK H P		PER CENT INCREASE
	MAY, 1945	MAY, 1944	
SOUTHERN ONTARIO SYSTEM . . .	2,072.097	1,960.916	+ 5.7
THUNDER BAY SYSTEM	121.984	118.096	+ 3.3
NORTHERN ONTARIO PROPERTIES . .	229.118	179.503	+ 27.6
TOTAL	2,423.199	2,258.515	+ 7.3

PRIMARY AND SECONDARY LOADS

SOUTHERN ONTARIO SYSTEM . .	2,172.914	2,049.122	+ 6.0
THUNDER BAY SYSTEM	136.595	132.842	+ 2.8
NORTHERN ONTARIO PROPERTIES	<u>297.885</u>	<u>238.994</u>	+ 24.6
TOTAL	2,607.394	2,420.958	+ 7.7

MUNICIPAL LOADS, APRIL, 1945

SOUTHERN ONTARIO SYSTEM

SOUTHERN ONTARIO SYSTEM			Popula- tion		Popula- tion			
NIAGARA DIVISION (25-Cycle)			H.P.		H.P.			
	H.P.	Popula- tion						
Acton	1,712	1,903	Erie Beach	11	21	Palmerston	646	1,400
Agincourt	213	P.V.	Essex	553	1,886	Paris	1,934	4,604
Ailsa Craig	143	487	Etobicoke	8,653	V.A.	Parkhill	233	1,029
Alvinston	117	649	Exeter	783	1,654	Petrolia	1,005	2,768
Amherstburg	1,054	2,704	Fergus	1,518	2,759	Plattsville	146	P.V.
Ancaster Twp.	420	V.A.	Fonthill	187	860	Point Edward	1,778	1,199
Arkona	72	403	Forest	630	1,562	Port Colborne	1,643	6,928
Aurora	1,370	2,821	Forest Hill	7,701	12,172	Port Credit	1,078	1,934
Aylmer	947	1,985	Galt	11,822	15,126	Port Dalhousie	874	1,599
Ayr	176	760	Georgetown	2,072	2,452	Port Dover	471	1,790
Baden	657	P.V.	Glencoe	206	763	Port Rowan	110	700
Beachville	838	P.V.	Goderich	1,689	4,674	Port Stanley	360	824
Beamsville	504	1,227	Granton	71	P.V.	Preston	4,302	6,656
Belle River	184	836	Grimsby	903	1,988	Princeton	146	P.V.
Blenheim	619	1,873	Guelph	12,385	23,074	Queenston	125	P.V.
Blyth	141	662	Hagersville	746	1,524	Richmond Hill	525	1,295
Bolton	206	629	Hamilton	171,135	164,719	Ridgetown	649	1,986
Bothwell	146	683	Harriston	525	1,292	Riverside	1,395	5,235
Brampton	3,115	6,157	Harrow	600	1,092	Rockwood	153	P.V.
Brantford	22,373	31,622	Hensall	186	686	Rodney	152	758
Brantford Twp.	1,302	V.A.	Hespeler	2,955	2,938	St. Catharines	30,286	34,541
Bridgeport	167	P.V.	Highgate	103	322	St. Clair Beach	115	138
Brigden	93	P.V.	Humberstone	605	2,831	St. George	200	P.V.
Brussels	149	784	Ingersoll	3,601	5,757	St. Jacobs	369	P.V.
Burford	236	P.V.	Jarvis	188	513	St. Marys	1,676	4,009
Burgessville	49	P.V.	Kingsville	636	2,453	St. Thomas	8,813	17,045
Burlington	1,680	3,925	Kitchener	29,756	35,465	Sarnia	6,996	18,599
Burlington Beach	459	1,474	Lambeth	134	P.V.	Scarborough Twp.	5,104	V.A.
Caledonia	406	1,430	LaSalle	286	907	Seaforth	1,057	1,782
Campbellville	47	P.V.	Leamington	1,880	6,048	Simcoe	2,983	6,304
Cayuga	147	700	Listowel	1,518	2,984	Smithville	200	P.V.
Chatham	8,007	17,184	London	43,867	81,567	Springfield	71	382
Chippawa	341	1,228	London Twp.	566	V.A.	Stamford Twp.	3,078	8,275
Clifford	111	491	Long Branch	1,471	4,258	Stoney Creek	265	933
Clinton	703	1,879	Lucan	188	643	Stouffville	334	1,198
Comber	152	P.V.	Lynden	120	P.V.	Stratford	7,599	17,163
Cottam	80	P.V.	Markham	331	1,175	Strathroy	1,593	2,834
Courtright	50	355	Merlin	108	P.V.	Streetsville	199	701
Dashwood	104	P.V.	Merritton	10,806	2,916	Sutton	210	949
Delaware	80	P.V.	Milton	1,529	1,915	Swansea	3,170	7,100
Delhi	657	2,430	Milverton	485	994	Tavistock	687	1,080
Dorchester	109	P.V.	Mimico	3,057	8,785	Tecumseh	394	2,391
Drayton	141	528	Mitchell	808	1,670	Thamesford	233	P.V.
Dresden	478	1,525	Moorefield	75	P.V.	Thamesville	208	816
Drumbo	99	P.V.	Mount Brydges	104	P.V.	Thedford	125	598
Dublin	34	P.V.	Newbury	35	298	Thorndale	84	P.V.
Dundas	2,948	5,245	New Hamburg	630	1,441	Thorold	2,933	5,284
Dunnville	1,377	3,916	Newmarket	1,864	3,800	Tilbury	1,607	1,923
Dutton	272	830	New Toronto	12,301	9,469	Tillsonburg	1,631	4,602
East York Twp.	10,088	41,573	Niagara Falls	10,976	20,371	Toronto	373,293	657,612
Elmira	1,318	2,069	Niagara-on-the-Lake	824	1,764	Toronto Twp.	3,510	V.A.
Elora	478	1,185	North York Twp.	11,441	V.A.	Wallaceburg	4,981	4,802
Embro	115	420	Norwich	489	1,301	Wardsville	35	221
Erieau	135	218	Oil Springs	181	541	Waterdown	250	867
			Otterville	100	P.V.	Waterford	467	1,294
						Waterloo	6,445	8,968
						Watford	396	1,023

MUNICIPAL LOADS, APRIL, 1945

	H.P.	Popula- tion		H.P.	Popula- tion		H.P.	Popula- tion
Welland -----	12,989	14,899	Neustadt -----	46	43	Kemptville -----	341	1,230
Wellesley -----	116	P.V.	Orangeville -----	766	2,558	Kingston -----	15,895	29,545
West Lorne -----	312	768	Owen Sound -----	6,334	13,559	Lakefield -----	497	1,301
Weston -----	5,568	6,234	Paisley -----	114	530	Lanark -----	98	686
Wheatley -----	222	761	Penetanguishene -----	1,038	4,177	Lancaster -----	55	570
Windsor -----	54,133	118,040	Port Carling -----	97	520	Lindsay -----	3,913	8,345
Woodbridge -----	645	1,100	Port Elgin -----	447	1,415	Madoc -----	203	1,130
Woodstock -----	9,450	12,339	Port McNicoll -----	84	95C	Marmora -----	142	1,004
Wyoming -----	111	538	Port Perry -----	285	1,175	Martintown -----	42	P.V.
York Twp. -----	21,796	77,175	Priceville -----	10	P.V.	Maxville -----	111	811
Zurich -----	126	P.V.	Ripley -----	101	420	Millbrook -----	126	749
(66 $\frac{2}{3}$ -Cycle)			Rosseau -----	25	305	Morrisburg -----	370	1,484
Bronte -----	213	P.V.	Shelburne -----	254	1,053	Napanee -----	1,467	3,241
Oakville -----	1,549	4,243	Southampton -----	539	1,467	Newcastle -----	184	701
Trafalgar Twp. -----	577	V.A.	Stayner -----	268	1,106	Norwood -----	152	710
GEORGIAN BAY DIVISION			Sunderland -----	88	P.V.	Omeme -----	190	630
(60-Cycle)			Tara -----	101	510	Orono -----	100	P.V.
Alliston -----	435	1,700	Teeswater -----	185	973	Oshawa -----	18,003	26,610
Arthur -----	167	1,089	Thornton -----	23	P.V.	Ottawa -----	38,295	150,816
Bala -----	117	355	Tottenham -----	105	532	Perth -----	1,823	4,187
Barrie -----	4,268	9,599	Uxbridge -----	334	1,480	Peterborough -----	15,031	24,977
Beaverton -----	219	941	Victoria Harbour -----	65	979	Pictou -----	1,350	3,400
Beeton -----	89	617	Walkerton -----	1,023	2,534	Port Hope -----	2,841	4,997
Bradford -----	256	1,041	Waubashene -----	80	P.V.	Prescott -----	1,573	3,318
Brechin -----	48	P.V.	Wiarion -----	307	1,750	Renfrew -----	182	5,673
Cannington -----	178	761	Windermere -----	28	117	Richmond -----	69	428
Chatsworth -----	70	333	Wingham -----	656	2,149	Russell -----	66	P.V.
Chesley -----	587	1,812	Woodville -----	67	439	Smiths Falls -----	3,150	7,741
Coldwater -----	178	545	EASTERN ONTARIO DIVISION			Stirling -----	291	947
Collingwood -----	2,739	6,249	(60-Cycle)			Trenton -----	5,538	8,183
Cookstown -----	89	P.V.	Alexandria -----	212	1,976	Tweed -----	280	1,181
Creemore -----	155	661	Apple Hill -----	39	P.V.	Warkworth -----	80	P.V.
Dundalk -----	232	686	Arnprior -----	1,313	4,019	Wellington -----	177	948
Durham -----	370	1,874	Athens -----	95	626	Westport -----	109	725
Elmvale -----	136	P.V.	Bath -----	33	325	Whitby -----	1,484	4,236
Elmwood -----	60	P.V.	Belleville -----	8,152	15,498	Williamsburg -----	92	P.V.
Flesherton -----	56	452	Bloomfield -----	106	636	Winchester -----	369	1,017
Grand Valley -----	151	645	Bowmanville -----	3,127	3,850	THUNDER BAY SYSTEM		
Gravenhurst -----	1,215	2,261	Brighton -----	405	1,462	(60-Cycle)		
Hanover -----	1,327	3,190	Brockville -----	5,108	11,112	Fort William -----	16,371	30,370
Holstein -----	20	P.V.	Cardinal -----	311	1,602	Nipigon Twp. -----	229	V.A.
Huntsville -----	1,214	2,943	Carleton Place -----	1,881	4,143	Port Arthur -----	25,170	24,217
Kincardine -----	755	2,483	Chesterville -----	281	1,094	NORTHERN ONTARIO		
Kirkfield -----	25	P.V.	Cobden -----	123	643	PROPERTIES		
Lucknow -----	315	856	Cobourg -----	2,350	5,907	Nipissing District		
MacTier -----	134	V.A.	Colborne -----	237	960	(60-Cycle)		
Markdale -----	178	776	Deseronto -----	226	1,002	North Bay -----	5,179	16,013
Meaford -----	778	2,759	Finch -----	82	396	Patricia District		
Midland -----	4,753	6,754	Frankford -----	144	1,095	(60-Cycle)		
Mildmay -----	132	764	Hastings -----	143	823	Sioux Lookout -----	299	1,967
Mount Forest -----	513	1,936	Havelock -----	142	1,103	Sudbury District		
			Iroquois -----	288	1,123	(60-Cycle)		
						Capreol -----	249	1,660
						Sudbury -----	9,923	36,724

THIS STREET IS...

SAFELY Lighted*



Make your Post-War Plans Now... for Safe, Efficient Street Lighting

Properly lighted streets are safer streets for every form of traffic. But, to be efficient, street lighting must be planned. The details of traffic flow, unusual or hazardous sections, expected changes in future transportation methods . . . all these must receive careful study. And after proper analysis the complete plan for your locality and individual conditions should be

made by competent authorities.

Engineers of the Hydro-Electric Power Commission offer to Hydro municipalities their aid and the knowledge acquired from years of concentrated experience. They will make recommendations that will assure the most satisfactory street illumination for your community. This Hydro service is available without charge.



NOW is the time to plan for post-war street lighting that will ensure safe, peace-time traffic.

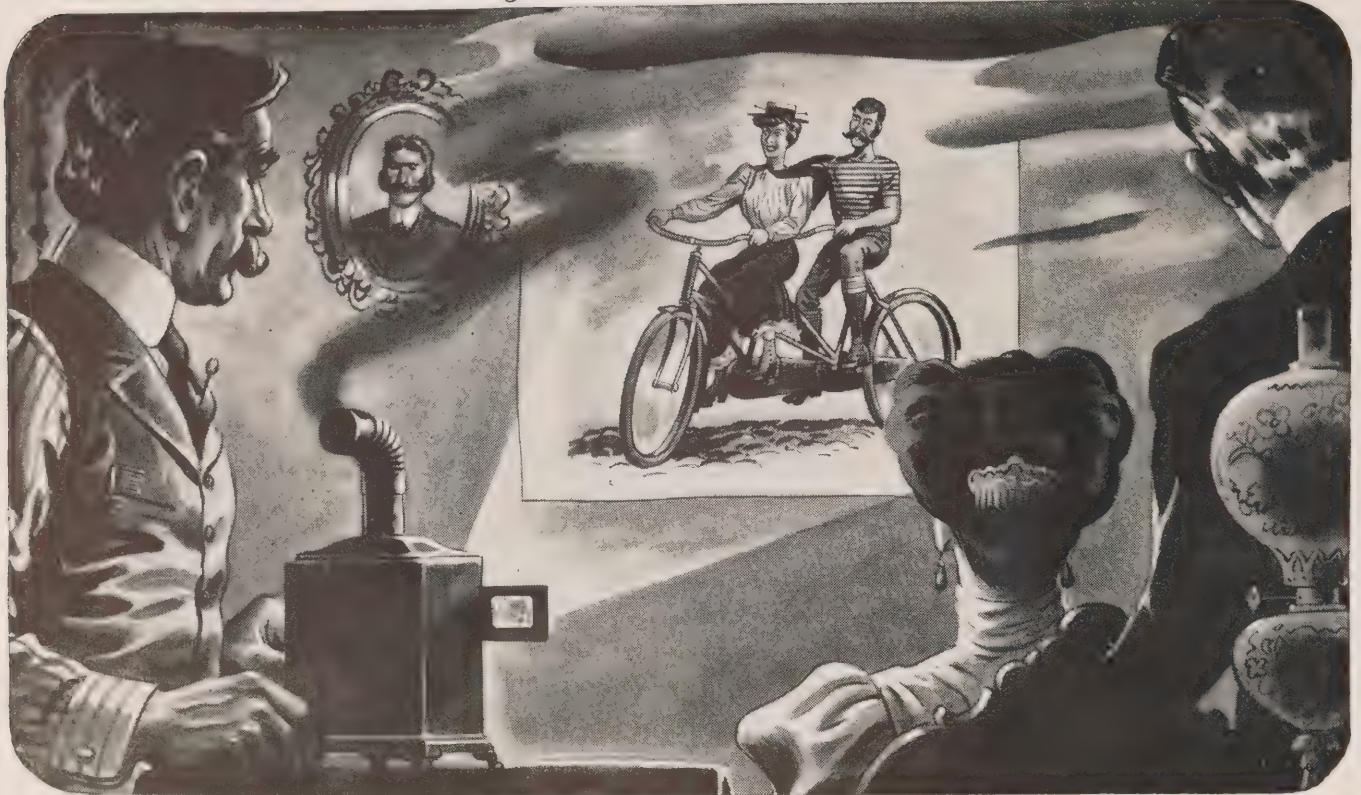
THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO



HYDRO *News*

VICTORY

HYDRO *Lightens* The Way !



THEY WOULDN'T HAVE BELIEVED IT!

● The gay nineties weren't so gay, by today's standards. Think how the folks then would have felt had anyone told them of the wonders of the modern motion picture theatre. They wouldn't have believed it!

In the transition from those days to this modern age we owe a great deal to electricity. Today—we are dependent upon it in hundreds of ways. It will do more for us in the days to come!

In the future Hydro will serve industry, the home and the farm in even greater measure than in the past. Plan now, to let Hydro lighten your tasks and make your living more comfortable in the brighter days ahead.

THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO



THE HYDRO - ELECTRIC POWER COMMISSION OF ONTARIO

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THE FRONT COVER



THIS month's front cover symbolizes the spirit of solemn thanksgiving and rejoicing which marked victory observances in Allied countries following the surrender of Japan and the dawn of peace on a war-weary world. Entitled "Victory," it is an arresting camera impression, recorded by photographer Alan Walker, of the thanksgiving service at the cenotaph in front of Toronto's City Hall.

Volume 32

September, 1945

Number 9

CONTENTS

	Page
Memorial At New Delhi - - - - -	2
Page Three -- - - - -	3
Harnessing Horsepower - - - - -	4
Commission Opens School - - - - -	8
Back On The Job - - - - -	9
Huntsville - - - - -	10
Around The Hydro Circuit - - - - -	12
Teacher Recalls Experiences - - - - -	13
Now It Can Be Told - - - - -	14
Acclaim V.C. Winner - - - - -	16
Come Into The Garden - - - - -	17
Two Engineers From India - - - - -	19
Hydro Home Forum - - - - -	21
This And That - - - - -	22
Lighter Lines - - - - -	26
Downwards Puzzle - - - - -	27
Monthly Load Summary - - - - -	27
Municipal Loads - - - - -	28





ILLUMINATION of memorials and public buildings was a feature of V-E Day observances in many parts of the world. The interesting illustration above shows how lighting accentuated the impressiveness of the King George V memorial at New Delhi, India. Erected on Princes Place, this memorial was originally urged by the ruling princes. Later the princes merged their scheme with a larger one for an all-Indian memorial and His Excellency, the Marquis of Linlithgow, then Viceroy, issued an appeal for a subscription. Sir Edward Dwyers was invited to submit a design, and on November 14, 1939, the memorial was unveiled by the Viceroy.

WAR AND PEACE

ON November 11, 1918, millions of people in many countries believed that the war to end all wars had been fought and won. The high resolve and good intentions of peace-loving men found expression in the League of Nations. But the forum which was to replace the fighting front failed in its all-important role.

These thoughts are in the minds of thinking people at this time as the Allied Nations set about building a new peace structure which must not fail if decency, freedom and humanity itself are to survive.

Good intentions did not preserve the peace of the world after the last war: they will not prevent another war. There is a lesson for all in the blunt philosophy that the road to hell is paved with good intentions.

During the first phase of this war when Hitler swept across the low countries, France and to the gates of Moscow and Alexandria, people who have always had good intentions began to realize that the evil can be brilliantly efficient and that good can be paralytically futile.

This war, however, has another important lesson for all who will take it to heart: faith is still the strongest power in the world if it is supported by co-operative action.

That is a lesson that must not be forgotten by the peoples of the United Nations as they join in Thanksgiving for victory and embark upon the task of building a better world.

—V—

IN APPRECIATION

IN this issue, Hydro News publishes the eleventh and concluding article in the Harnessing Horsepower series.

If comments to date may be taken as a criterion, these articles have, on the whole, achieved the objective of giving laymen a better understanding of the many problems and detailed operations involved in the building of a power plant.

At this time, therefore, Hydro News wishes to acknowledge the fine co-operation of the heads of various Commission departments and of the engineers who assisted in the preparation of this series. Their task was not easy for it meant getting away as much

as possible from the technical language they use every day and expressing themselves in a way which would be understood by the lay reader.

The constructive assistance given by these engineers, many of whom are pre-eminent in their respective fields in Canada, enabled Hydro News to pass along to its readers authentic and detailed information which could not otherwise have been given.

The editor and members of the Hydro News staff, who worked with the engineers in the writing and editing of the articles, were very conscious of that fascination which is associated with the creation of great projects that are designed to bring far-reaching benefits to so many people.

The building of power plants forms an outstanding chapter in the history of Hydro in Ontario. The many developments, which have been constructed, stand as monuments to engineering skill and to the spirit of public service which made Hydro a reality.


—V—

LEST WE FORGET

ALTHOUGH at long last Victory has been achieved and the war is over, Canadians will be well advised to remember that there are vast and complicated problems of readjustment to be met which call for the willing co-operation of all good citizens.

The world, as it emerges from long years of conflict, is like a patch-work quilt worn so threadbare in spots that it no longer bears any resemblance to the original fabric. Whole countries have been ground down to a sort of skeleton life, and in some areas of liberated Europe there are alarming food shortages. Even in Great Britain there is a lack of many essential commodities. Canada is pledged to give what assistance it can in supplying the food-stuffs and certain other goods. At the same time, within its own borders, the sizeable job of reconversion from a war-time to a peace-time economy must be undertaken.

By purchasing Victory bonds, under whatever name they may now be given, Canadians will be assisting their country and one another in a different period of reconstruction and readjustment. At the same time, they will be definitely benefiting themselves and their families by investing in what may surely be regarded as the very sheet anchor of security.



HARNESSING HORSEPOWER

THIS is the eleventh and concluding article in the Harnessing Horsepower series presented with the idea of giving the layman a clearer conception of the problems and work involved in constructing a power plant. In these articles an effort has been made to outline the various operations, step by step, from the time a site is selected until the electricity is available in homes and factories that may be located hundreds of miles away.—THE EDITOR.

UNTAPPED POWER on the Aguasabon river near lake Superior—this river falls 225 feet in a series of rapids and cascades. The flow has been augmented by the Long Lac diversion.

By Harry M. Blake, Hydro News

IN the preceding articles of this series the developments at a power site have been traced through their various phases from the preliminary surveys to the production of electricity at the generating station. In conclusion, it may not be amiss to consider briefly how, from small beginnings, the Hydro-Electric Power Commission of Ontario has grown into one of the leading power systems in the world under unified control. It will be instructive to see how its operations have been keeping pace with the increasing demands for electrical power. Finally, it will be interesting to glimpse its prospects for further expansion in the interests of the public it was founded to serve.

Development of the water power resources of the province of Ontario, in the interests of all sections of the community, was visualized by the late Sir Adam Beck, who was among the first to realize clearly the important role that electricity was destined to play in the progress and prosperity of the province. For the practical fulfilment of his vision it was necessary to create a type of public service organization, which, while receiving popular acclaim, would invite the confidence of shrewder business interests. It would have to pay its own way as far as internal economy was concerned and not prove an embarrassment to government.

So it was, that for some time after the establishment of the Commission by legislation in 1906, its operations were largely confined to the distribution of electricity obtained from private power plants. As the years passed and its financial structure became stronger, the Commission was enabled to embark upon the real business for which it had been set up. New power developments aimed to assist industrial expansion and to stimulate a more vigorous and progressive urban and rural life were undertaken, after careful planning, in different parts of the province; while, as opportunity occurred, private power plants which could obviously be operated by the Commission more economically and with greater advantage to all concerned were purchased by friendly negotiation.

March of Hydro Remarkable

Disregarding the war period, during which material and labour have been sharply restricted the march of Hydro during the past two decades—well within the limits of sound financing—has been remarkable. Towards the end of 1944 there were no less than 54 generating stations in the system which the Commission has developed. These transmit electrical energy to various distribution centres in all parts of the province.

In the Niagara district, on the Canadian side, there is a concentration of major power plants; all, with the exception of the Canadian Niagara Power Company's plant, are now operating under the ownership and control of Ontario

Hydro. The greatest hydraulic project in this area was the Queenston-Chippawa development, undertaken by the Commission, itself, in the early twenties. This plant has a capacity of 500,000 horsepower, while the plant constructed by the Ontario Power Company ranks next in importance with a capacity of 180,000 horsepower. The Toronto Power Company's installations contribute 150,000 horsepower; while, near St. Catharines, the new DeCew Falls development, completed by the Commission as recently as 1943, along with the old DeCew plant, produce an additional 120,000 horsepower.

The Weir at Niagara

The latest hydraulic undertaking at Niagara, however, was the building of the remedial weir above Niagara Falls, which was completed in September, 1944. This structure, built in the swift water above the rapids in the upper river, extends about 1,700 feet towards the American shore from a point about 200 feet distant from the Canadian shore. The lateral diversions of the river flow effected through the gaps at each end of the weir serve to maintain an ample supply of water for the power plants down-stream, and at the same time assist the movement of ice from the vicinity of the intakes of the power plants on the United States side of the river. The weir, itself, lies entirely below the surface of the water. It is a rock-fill, constructed of huge fragments, some of which weigh as much as ten tons. Built in this way the weir fulfills its purpose without too greatly impeding the natural flow of the river.

The demands for electrical supply in the highly industrialized sections of southern Ontario are further met by power obtained under agreements with the Gatineau, MacLaren and Beauharnois Power companies in Quebec and from major generating plants on the Ottawa river. The Chats Falls plant, which is owned jointly by the Commission and the Ottawa Valley Power Company, contributes its entire output of approximately 216,000 horsepower to Hydro. Transmission lines, picking up the power generated at these big stations, carry electrical energy via Leaside, just outside Toronto, all the way from Beauharnois to Windsor, a distance of more than 525 miles. Power is conveyed to Leaside at 220,000 volts when it is stepped down to 110,000 volts for further transmission. Power destined for step-down at the Commission's new transformer station at Burlington continues on its way at the high voltage.

Power for Smaller Communities

Less impressive from the point of view of output, but just as important to the small industries and communities which derive benefits therefrom, are the small generating stations constructed or acquired by Hydro in that section of old Ontario extending eastward from Toronto to the provincial boundary. If the stations in the Nipissing and Muskoka districts are included in the enumeration, there are twenty-five of these power plants staggered across the country. This grid system of generating stations, as it might loosely be called, has been systematically developed by Ontario Hydro. Not only do these smaller plants solve many problems of economical transmission and distribution, but they also provide a considerable reserve of electrical energy which can be switched into other divisions as circumstances call for. And just here is an illustration of one of the great advantages accruing from the Commission's unified administration and control. As was the case with

Dumas' Three Musketeers, it is "all for one, and one for all."

Transfer of power from one district to another has been facilitated by the physical interconnection of the old divisions of Niagara, Eastern Ontario and Georgian Bay. These were recently re-formed by the Commission into the Southern Ontario system, and frequency-changers provide synchronous operation of the various divisions. Incidentally, motors and electric clocks are synchronized through the whole area from Ottawa to Windsor.

Interconnection created the problem of controlling the power transferred from one division to another, and specially designed equipment was set up for regulating the output of Chats Falls, Barrett Chute and plants of the Gatineau Power Company supplying power to the Commission. Control of these widely separated plants is exerted from Chats Falls through carrier communication channels totalling about 200 circuit miles.

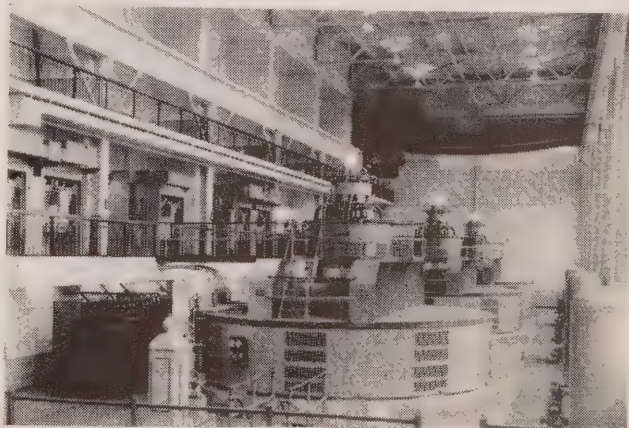
The Ogoki Diversion

Ranking as one of the most outstanding engineering achievements of its kind on this continent is the Ogoki diversion carried out by the Commission in the hinterland of Northern Ontario. The work on this diversion began in 1940 and was completed in 1943. Water which formerly flowed in a north-easterly direction into the Albany river and on into James Bay has been "detoured" south through Lake Nipigon and the Nipigon river into Lake Superior. This scheme, together with another smaller-scale diversion effected at Long Lac some 120 miles distant, makes possible the development of an additional 360,000 horsepower between Lake Nipigon and the mouth of the St. Lawrence river.

Another great benefit from the Ogoki and Long Lac diversions will be enjoyed by shipping. Statisticians report that, within a few years, the diverted water will raise the level of the lower Great Lakes about 2-1/4 inches. That means that navigation will benefit by approximately \$1,000,000 a year. It works out like this. The loading capacity of a freighter is determined by the depth of the shallower navigation channels. Consequently, every inch by which the water in these channels is raised contributes to an increase in the tonnage which a freighter may safely carry.

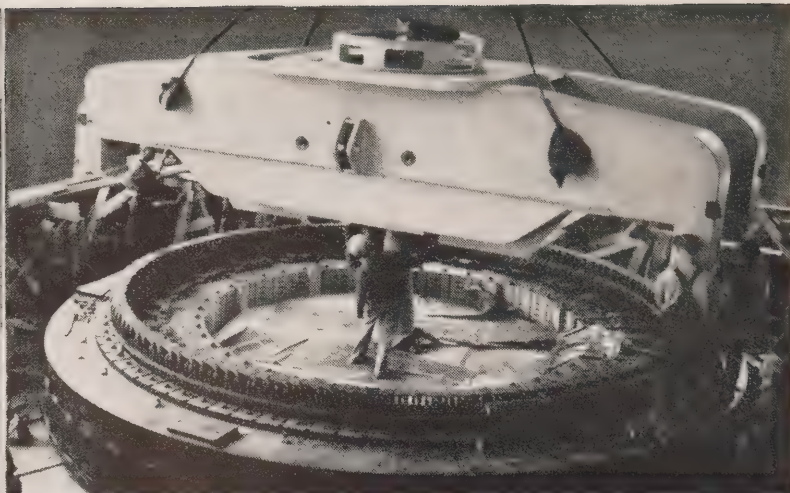
These benefits to shipping will be shared by American

INTERIOR OF Alexander generating station (below) on the Nipigon river showing three generating units. Along with the plant at Cameron Falls, its capacity has been increased by the Ogoki-Long Lac diversions.





WATER LIBERATED through dam gates at Abitibi Canyon celebrates its freedom in tumultuous riot. The same power is packed by the water led under control to the turbines which provide the impulse for the generation of electricity.



FOR MORE than a generation The Hydro-Electric Power Commission of Ontario has been building power plants in Ontario. With the installation of generator units a station is ready to transform water power into serviceable electrical energy.

bottoms, and American appreciation has already been reflected in the arrangements which Ontario Hydro has been able to make for additional power at Niagara.

Developments in Northern Ontario

Mining developments in Northern Ontario have called for a greatly increased use of electricity, not only at the mines themselves, but also in the thriving communities which have grown up around them. Sudbury and Timmins, for instance, compare favourably in size and industrial activity with Brantford and St. Catharines. The Commission has been very busy in the North both developing new power sites and acquiring power properties to round out its system and place it in a position to supply more adequate and efficient services.

The Commission's biggest power plant in Northern Ontario is at Abitibi Canyon. Construction here was carried out in a most capable manner by the Ontario Power Service Corporation, a subsidiary of the Abitibi Power and Paper Company. Many problems were encountered, the solution of which redounds to the credit of the Corporation's engineers. The river channel at the site is confined to a deep and narrow gorge, which made the necessary dewatering of the area before construction could proceed an unusually difficult planning job.

Another interesting feature of the Abitibi development was the building of a double-track railway bridge across the chasm which served not only for the handling of material but also as a platform from which major operations of ex-

cavation and construction were carried out. The engineer in charge of the work could stand on this bridge and supervise the various jobs going on much as an admiral from the bridge of his flagship may direct the operations of his fleet.

The Commission took over control of the Abitibi plant in April, 1933, after its acquisition by the provincial government. In the following month the first unit was placed in operation, and the installation of all five units was completed by May, 1936. At the present time the capacity of the plant is 240,000 horsepower. Most of the electrical energy generated is taken up by the nickel mines in the Sudbury district and by the gold mines in the Kirkland Lake, Porcupine and Larder Lake districts.

Two other major power plants are located on the Nipigon river—at Cameron Falls and Alexander Landing. Benefiting by the Ogoki diversion, they have a capacity of 143,000 horsepower. They supply the electricity for many of the mines and pulp and paper mills in the Thunder Bay district and also serve the flourishing lake-head cities of Fort William and Port Arthur.

From Port Arthur 120 miles of 110 kv. transmission line carry current to the Steep Rock Iron mines near Atikokan where Hydro electricity applied to the pumping operations materially assisted in the removal of over a billion gallons of water to uncover 15,000,000 tons of rich iron ore lying below the surface of Steep Rock Lake. Descriptions of Hydro's achievements in connection with the development of this important undertaking are contained in Hydro News issues of June-July and December, 1943. A step-down station has been constructed at Atikokan to supply electricity to the mining colony.

Hydro's Charms Revealed

The two Hydro power plants on the Nipigon enjoy one of the most beautiful natural sites on the Commission's system. And the charm of nature has been enhanced rather than marred by the Hydro Developments. In sunlight

these handsome generating stations have much the appearance of castles set amid moats and dancing waters. By night the approach to the Cameron Falls plant is one to be remembered. As one comes out of the gloom of the forest the power house, in a blaze of light, breaks suddenly upon the vision. The reflections from the water add glimmer and sparkle to the beauty of the scene which seems to glow with all the glamour of fairyland.

At Ear Falls on the English River is another important Hydro generating station. This supplies electricity to the Red Lake mining district and to the towns of Hudson and Sioux Lookout. From this station power is also conveyed to the Patricia mining area, which is further accommodated by another power plant at Rat Rapids near the head-waters of the Albany.

More Power Acquired in Mining Area

One of the most recent moves by Hydro in the rounding out of its Northern Ontario Properties, which it administers in trust for the provincial government, was the purchase in March of this year of the power system of the Northern Ontario Power Company. The properties include eight hydro-electric plants with an installed capacity of some 65,000 horsepower, 739 miles of transmission lines, 157 miles of distribution lines and 421 miles of telephone lines.

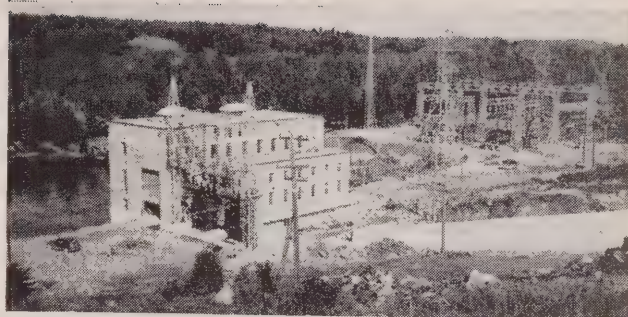
For some years the Commission had been selling power wholesale to the Northern Ontario Power Company and at the same time supplying adjacent mining territory with service. The properties have now been amalgamated with the Abitibi district of the Commission's Northern Ontario Properties. By eliminating duplication of service economies have been secured so that the Commission has been able to reduce the cost of power to the mines in this territory. This recent acquisition has also placed the Commission in a position to extend its Hydro rural service to many consumers in the areas formerly served by the company.

Rural Electrification

Rural services have always been kept very much in mind by The Hydro-Electric Power Commission of Ontario. Much has already been done, wherever economically possible, to provide the farming and rural areas of the province with substantial electrical services. By the end of 1944 there were 21,045 miles of rural distribution line serving approximately 146,600 consumers. And there were no less than 61,486 farms using Hydro.

Through a five-year plan of rural electrification which has received the approval of the provincial government, the Commission plans systematically to extend Hydro services to the farmers and the residents of rural areas everywhere in Ontario. By the end of the period it is expected that 84 per cent of rural homes and 83 per cent of farms will be enjoying the full benefits of electricity. This will entail the construction of 7,329 additional miles of distribution line.

The benefits which will accrue from this five-year plan are not, however, restricted to the enjoyment of Hydro blessings by the new consumers. The scheme must be classed among the most important of postwar rehabilitation projects. The employment which will be given directly and



AT BARRETT CHUTE (above) and at other sites along the course of the Madawaska river, the commission has harnessed water power at several points. There is estimated to be still 150,000 horsepower awaiting development on this tributary of the Ottawa.

indirectly has been calculated at 26,231 man years, while various industries will be benefited during the critical period of transition from wartime to peacetime activity.

Outlook for the Future

Electricity has a flexibility which makes it adaptable to more varied purposes than other types of power. There is no question that its use will be continually on the increase. In Ontario, generally speaking, electricity can be derived more cheaply and economically by the harnessing of water power than by any other means. Is there a limit to these water power resources? Will there come a time when there will be no more hydro developments possible, when the additional demands for electricity will have to be met by the installation of steam plants as is the case in countries which have been denied the favourable lake and river systems of this province?

The answer is that water power developments will continue for many years to come; while transmission and distribution facilities are being constantly improved by the Commission. The potential water power resources of Ontario reckoned on the basis of six months flow are 6,940,000 horsepower. Converted into terms of actual installed capacity, this figure could easily rise to 9,000,000 horsepower. Of these potential resources the various power developments through the province now represent an installed capacity of 2,673,443 horsepower. Much of the remaining potential water power is, of course, scattered and difficult to get at. It would not be economical to develop it until the need exists. In the more immediate view, the Ottawa and the St. Lawrence rivers would seem to offer the most feasible sites for large scale developments within the range of economic service. On the Ottawa alone there is estimated to be still untapped some 500,000 horsepower in Ontario, while its tributary, the Madawaska, can provide an additional 150,000 horsepower. When the St. Lawrence Waterways scheme is approved by the Congress of the United States another million horsepower will be made available to Ontario alone.

Niagara, the greatest and most impressive of all the world's waterfalls, must, however, still remain the greatest of all single sources of electricity. And there is still a lot of untapped power at Niagara that can be developed.

COMMISSION OPENS SCHOOL FOR TRAINING OF LINEMEN

Will Aid Rehabilitation of Service Men and Provide Trained Personnel for Post-War Projects—Starts This Month

An important rehabilitation plan, designed to speed the return of hundreds of service men to civilian life and, at the same time, make available a corps of trained personnel required to launch Hydro's five-year rural electrification project, has been announced by Dr. Thomas H. Hogg, chairman of The Hydro-Electric Power Commission of Ontario.

The plan becomes effective this month with the opening of the Commission's school for the training of linemen. Located on the site of the York transformer station on Royal York Road, this school, which comes under the direction of the Commission's personnel department, headed by Wills MacLachlan, will be under the immediate supervision of S. K. Cheney with K. W. MacDermott acting as chief instructor.

Train 200 Students A Year

Present plans indicate that approximately 50 students will be trained every three months, or some 200 students each year to fill positions as linemen required to meet the needs of the Commission's post-war plans which include the five-year rural electrification program, announced recently by Hon. George H. Chaffies, vice-chairman of the Commission, and involving the building of over 7,000 miles of new rural distribution line.

Hydro municipalities throughout Ontario, through the Ontario Municipal Electric Association, headed by W. Ross Strike, former mayor of Bowmanville and now a member of the Hydro Commission, have had an active role in bringing the new plan into effect. Both the Association and the Commission, it is pointed out, recognized the need for such a school where linemen could be trained for Commission service and also for positions with local Hydro utilities. At the same time, the Department of Veterans' Affairs is co-operating closely in the development of the plan.

The Commission indicated that this school would be the largest of its kind in Canada and that it was highly probable its facilities would be extended to include training in other trades associated with the operation of Hydro.

The present buildings, although of a temporary character are completely equipped. In addition to the school proper, there will be sleeping and dining accommodation for the students and instructors. Present facilities in the school include all the tools used in line work.

Emphasis on Practical Work

The course is one in which the emphasis is definitely on the practical work which will be supplemented by lectures and visual educational methods involving the use of sound pictures. In this way, men who are "green" at the start will, at the close of the course, be thoroughly familiar with the most modern methods of line construction, the

theory of electricity and safety practices. Students who pass the examination will then be ready to take positions as junior linemen.

The men who direct the operations of the school are specially fitted for the work, the supervisory and teaching personnel having had years of experience in many phases of Hydro work, while they have been specially trained for their new tasks.

For the most part, students will come from the ranks of returning service men. To qualify for enrolment, a student must have a minimum of two years' high school education, be physically fit and have a liking for outdoor work.

World's Largest Power Project

China Investigates Year-Round Control Of Yangtze — Generation And Irrigation — Would Take 10 Years To Complete And Cost \$935,000,000

China will undertake one of the world's largest power and irrigation projects, if present plans materialize. These plans include year-round control of the flow of the Yangtze river, which will double the productive capacity of the surrounding 10,000,000 acres of land and supply electrical service to within a 300-mile radius of the dam site, thus serving a population exceeding that of the United States.

It will take ten years and approximately \$935,000,000 for the construction of this Yangtze Gorge project, according to John Lucien Savage, chief design engineer of the United States Interior Department's Bureau of Reclamation, who has just returned from the Orient where, for the past fourteen months, he has been investigating power and irrigation possibilities for the Chinese and Indian Governments.

At the request of the Chinese Government, Mr. Savage spent six months in China studying the proposed developments on the Yangtze and other rivers.

In India, he surveyed for the Provincial Governments, irrigation and other projects in the Punjab, Bengal, Madras and Mysore; with side trips to Afghanistan and Palestine where he saw projects now under consideration and in process of development.

It will be recalled that last November, members of the Chinese National Resources Commission visited this continent for the purpose of studying plans for the development of China's natural resources. This group, appointed by the Chinese Government, included twenty eminent technical men and economists.

During their stay in Toronto, they were dinner guests of the H.E.P.C., and later visited the Queenston-Chippawa plant at Niagara Falls.

BACK ON THE JOB



THREE HYDRO men who have returned to their desks in the Commission after serving in the armed forces were spotted by the Hydro News cameramen. The insets show the same gentlemen in service uniform. Top left is Lieutenant (E) G. A. BELL, R.C.N.V.R.; top right, Lieutenant-Colonel E. R. PURVIS, Canadian Army; lower picture is Squadron Leader H. A. MOLYNEUX, R.C.A.F.

HYDRO folk, in common with other Canadians who have been serving with various branches of the armed services, are beginning to get back into civilian life. Already over 100 of the 1,200 Commission employees who joined up have returned to their peacetime occupations with Hydro.

Typical of Hydro men who have been called upon to do specialized war work are: Lieutenant (E) G. A. Bell, R.C.N.V.R., Lieutenant-Colonel E. R. Purvis, D.S.O., E.D., Canadian Army, and Squadron Leader H. A. Molyneux, D.F.C., R.C.A.F.

Lieut. Bell entered the navy in 1943 and served for over two years. During that time he was stationed on the west coast, first at Esquimalt where he was electrical overseer of all the ships under construction on the west coast. Later he spent 15 months in Prince Rupert as electrical officer for that base and was in charge of main-



tenance of electrical equipment at the shore establishment and maintenance of electrical equipment in the naval craft based at that port. While he was stationed at Prince Rupert, (Continued on page 25)

HUNTSVILLE



HUNTSVILLE AS seen from Community Park Lookout.

KNOWN to thousands as "a vacation Utopia," Huntsville is a central summer and winter tourist point for the whole Lake-of-Bays district.

Served by Hydro since 1916, this ruggedly picturesque town was named after George Hunt, one of the first white settlers, who in 1870, erected a bark-roofed shanty in the then unbroken forest. This shanty was used as a rendezvous for all secular and religious meetings. In 1879, it is recorded that in the winter months a stage coach travelled daily to Bracebridge, about 25 miles away; and in summer, the journey was made by steam boat to Port Sydney and then by stage to Bracebridge. At that time, a stage coach was also running between Katrine and Emsdale three times a week.

Located on the Muskoka river and the Lake-of-Bays chain, which includes the Mary, Fairy, Vernon and Peninsular lakes, this enterprising municipality of some 2,900 inhabitants joined the Hydro family in 1916. The local commission of that day comprised L. H. Ware, chairman; J. S. Winnacott and mayor W. J. Abraham, commissioners.

The Huntsville Public Utilities Commission is now serving 744 domestic, 135 commercial and 17 industrial consumers, with an average monthly load of 1,200 horsepower. This municipality is in an enviable financial position, their final debenture payment having been made in December, 1939.

A small but efficient staff of seven administer the affairs of the commission. George F. Hutcheson is chair-

man, and the other commissioners are E. H. Flaxman and Mayor H. E. Rice, while E. M. Soden is the superintendent, and Andrew Kellock, Jr., secretary-treasurer.

Inauguration of Hydro

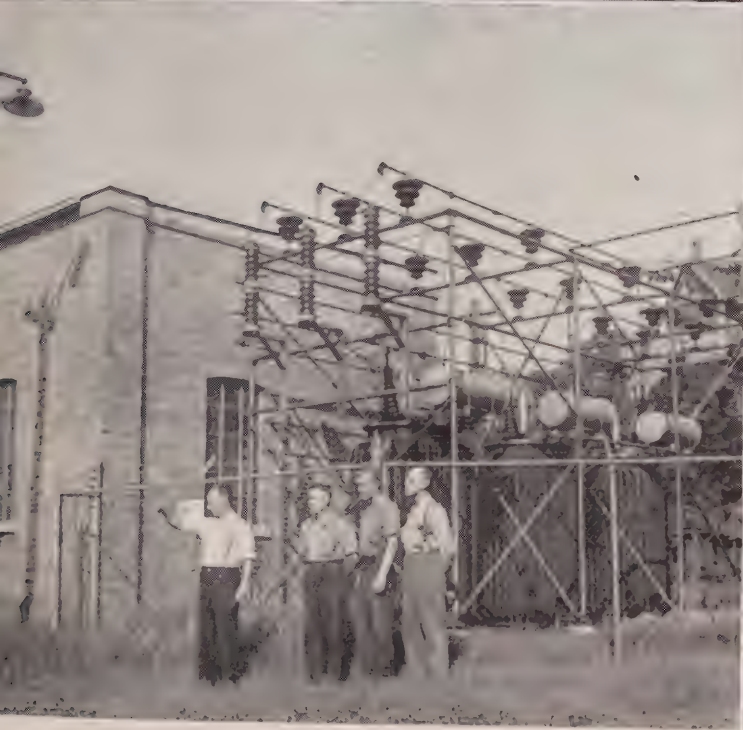
Huntsville, like other Hydro municipalities, has had a steady decrease in the cost of service to consumers. With the inauguration of Hydro, the average domestic monthly consumption was 12 kilowatt-hours, and the average cost was 8.6 cents per kilowatt-hour. Today, the average monthly consumption of domestic consumers is 147 kilowatt-hours, and the average net cost per kilowatt-hour is 1.2 cents.

Besides being the gateway to the Lake-of-Bays and Algonquin Park tourist region, famous for its natural beauty, Huntsville has a diversity of industries which have benefited from low-cost Hydro power. Among the leading companies are the Anglo-Canadian Leather Company which, it is claimed, is one of the largest sole leather tanneries in the British Empire, and the Muskoka Wood Manufacturing Company. Other industries include saw, planing and lumber mills, boat and brick works, floor, sash and door factories, and a diatomaceous earth plant.

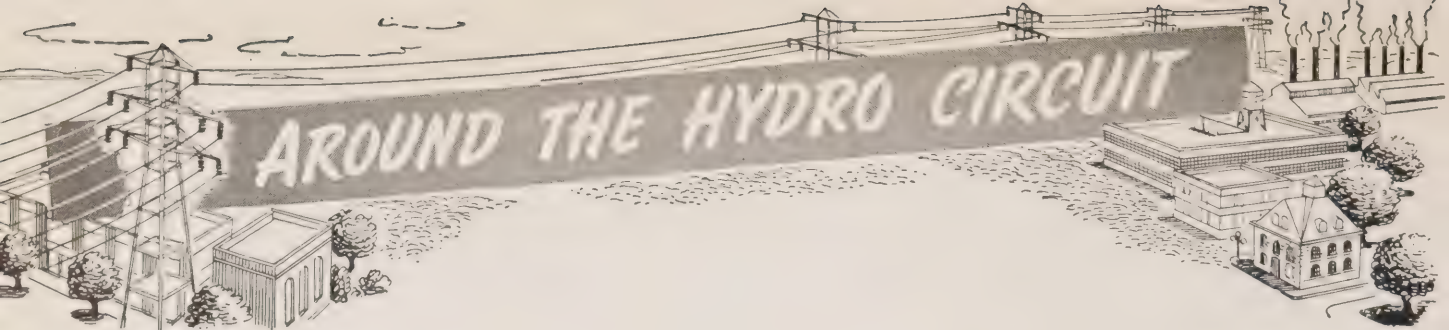
This section is also considered to be particularly suitable for agriculture, and grain and potatoes are produced in abundance.

Huntsville is located at an altitude of about 1,000 feet

(Continued on page 23)



MEMBERS OF Huntsville's Public Utilities Commission (top left) are, from left to right, E. H. Flaxman, and mayor H. E. Rice, commissioners; E. M. Soden, superintendent (inset); George F. Hutcheson, chairman; and Andrew Kellock, Jr., secretary. The top right picture was taken from the town reservoir and shows the Muskoka Wood Manufacturing Company on the left, and the Anglo Canadian Leather Company on the right. The lower left shot shows the substation and staff. On the right is Huntsville's main street showing town hall and post office building. Note the modern lighting standards.



GEORGE FORFAR HUTCHESON, chairman of the Huntsville Public Utilities Commission, is a graduate in Applied Science of the University of Toronto. His family were among the early residents of Huntsville where he attended primary and secondary schools. In private life, Mr. Hutcheson has an insurance agency but manages to find time for his many civic interests. He is the first vice-president of the Georgian Bay district O.M.E.A., first vice-president of the Huntsville Red Cross, and is an executive in church and fraternal organizations. This public official is also an ardent fisherman and during the famous winter season at Huntsville he enjoys the ancient sport of curling. In his college days, Mr. Hutcheson was a member of the famous Harrier team and was well known in football circles.

ANDREW KELLOCK, Jr., was on the staff of the Huntsville Public Utilities Commission for two years prior to his appointment as secretary-treasurer in 1931. Mr. Kellock was born in Glasgow, Scotland, and received his education in Huntsville. During his school days he was a familiar figure on the ball and hockey teams for which Huntsville has been noted. His interest in civic affairs embraces many fields. Mr. Kellock has been the town clerk and treasurer since 1931, and he has served as relief administrator and secretary-treasurer of the municipal cemetery board. Even with all these duties he still finds time to act as officer commanding the Second Reserve Battalion of the Algonquin Regiment, play a good game of golf and take a keen interest in his garden.

EDWIN HARRISON FLAXMAN, commissioner of the Huntsville Public Utilities, for the past six years, was born in 1874 in London, England, and in 1888 he was brought to Huntsville where his father established a merchant tailor business that commissioner Flaxman still operates. Mr. Flaxman has always been interested in the community, having served for nine years as a member of the Huntsville school board before his association with the public utilities.

HARMON EDMUND RICE, who is now serving his tenth term as mayor of Huntsville, was born in Wyoming, Ontario, and attended schools in Lambton County. During the first world war he was posted as paymaster to the 122nd Battalion. Mayor Rice, who is in the publishing business, has held many civic offices in the town of his adoption. He was treasurer from 1918 to 1926 and a member of the board of education in 1937, while in his capacity as chief magistrate he serves on the local public utilities commission. He is a golf enthusiast, and an amateur photographer in his leisure time.

JACK THOMPSON BEREAVED

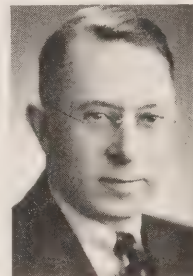
Many friends and colleagues of **JACK THOMPSON**, administration building engineer of The Hydro-Electric Power Commission of Ontario, joined in paying last tribute to his wife, the late Dallas Summerhill Thompson, who passed away suddenly in the Toronto East General Hospital on August 7 following an operation.

Funeral service was conducted in Ralph Day's parlour on Danforth Ave., and interment took place at St. James' Cemetery, Toronto.

Surviving Mrs. Thompson, in addition to her husband Jack, are a brother, Cyril Summerhill, an operator with the Kitchener Public Utilities Commission, and one daughter, Ruth.

KITCHENER MANAGER DIES

OSCAR C. THAL, general manager of the Kitchener Public Utilities Commission, passed away at the K-W Hospital in that city on August 19 after a long illness. Mr. Thal, who was 55 years of age, had been with the Kitchener Commission for 33 years, and during 1939-40 supervised the \$2,225,000 programme for the extension of public utilities in the municipality, which is one of the fourteen charter members of the Hydro family. He was also prominently associated with the Kiwanis Club.



Mr. Thal, who was bereaved of his wife some years ago, is survived by a daughter Marjorie, also of Kitchener, a brother Herman of Stratford, and two sisters, Mrs. Arthur Doran of Buffalo, N.Y., and Miss Ida Thal of Toronto.

O.M.E.A. MEETINGS

District No. 3 (Northwestern Ontario) Convention is being held in Fort William on September 6 and 7 at the Royal Edward Hotel, according to information received.

The Georgian Bay Municipal Electric Association, District No. 2 Convention is meeting on September 5, in the Thunder Bay Inn, Thunder Bay Beach, near Penetanguishene, for a general meeting at 1.30 p.m., and dinner in the evening.

Reports of these meetings will be published in the next issue of Hydro News.

TEACHER RECALLS EXPERIENCES IN HYDRO COLONY AT ABITIBI

**Life of Community Centres Round School—
Discovers “Warm Hospitality”**

BUILDING a Utopia in the wilderness is an idea that has captured the imaginations of many. There are even those who have got around to trying it, like the group of idealists who moved into the unexplored west in the last century to found communities like New Harmony.

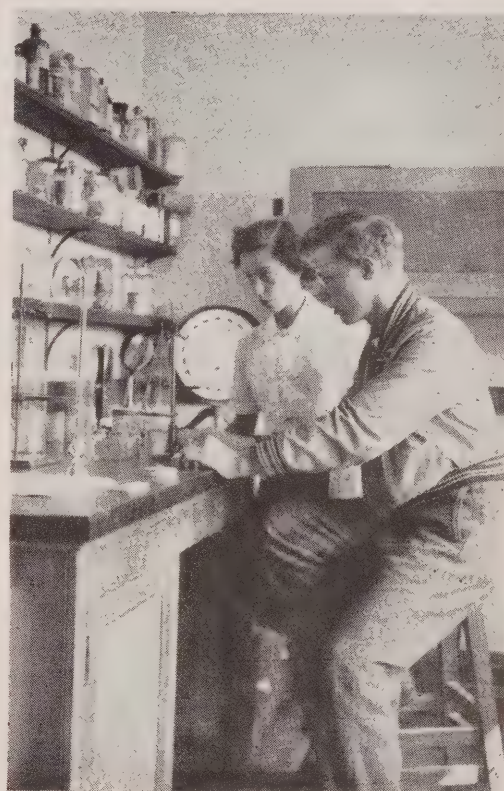
There is at least one Utopia in miniature in our own north woods—although it was founded not by zealots for a perfect society but by engineers and others motivated by a spirit of public service. It is the Abitibi Canyon settlement, a tiny dot of 19½ acres cut out of the vast forest that stretches north to James Bay. To be more precise, this colony is inhabited by the members of the Hydro staff at the Abitibi power development on the Abitibi River, 70 miles north of Cochrane and 39 miles south of James Bay and linked with the outer world by a Hydro train which meets the south bound Cochrane train twice a week. It consists of 35 houses, a hospital, a school, a staff house, a recreation hall, a store and a station. The houses have all modern conveniences and comforts, there is no wealth, no poverty, no crime—a Utopia indeed!

Group of Intelligent Children

No one in this community holds a more important position than the school teacher. And coming from the outside world no one would be better fitted for observing the life of the settlement. Writing in “The School” magazine, T. Rae Green, who had the interesting opportunity of spending three years in the colony, tells a little of his experiences. Mr. Green points out what an asset it is for any teacher to have as his class a group of intelligent children, cut off from the distractions of the outside world and hungry for information about everything. The life of the whole community centres in and around the school—“meet me at the school” being a phrase used by the oldest and youngest alike.

School is Unique

The school itself is unique on several counts. The Department of Education has given special permission to have all classes from kindergarten to senior matriculation taught under the same roof. Latest statistics show 26 children in public school and 8 in high school. There are two teachers to divide the work. The school building is modern in design with two classrooms, two recreation rooms in the basement, a fine library and a well-equipped laboratory. The school library is an unusually good one which is added to each year and compares favourably with libraries in large collegiats. Mr. Green points out that it is especially important for it is only through the spoken word or books that the children can get any idea of the



A WELL-EQUIPPED science laboratory is an outstanding feature of the Canyon school. Here the science teacher is helping a senior student with an experiment.

rest of the world. The science laboratory is very complete and lacks nothing that the older pupils might need for their experiments. In fact advanced courses in physics and chemistry are encouraged and Mr. Green mentions at least two of the men in the community who eagerly went to school themselves to take some of this work.

The building is electrically heated and has an automatic humidifying system which is important in the sharp dry cold of the north.

Health Carefully Guarded

The health of the children in this ideal community, is very carefully guarded. The public health nurse visits the school every week for a check up. Inoculations are important here for one disadvantage of any Utopia in the wilderness is that there is an inevitable lack of resistance to disease germs because of lack of exposure to them. There

(Continued on page 24)

NOW IT C



BLAST AND concussion from a "doodle bug" or flying bomb ripped out the walls and damaged installations at this substation in the borough of Stepney, London.



BLITZKRIEG BOMBS broke through the river wall and severed high tension cables at the Bankside substation in London. Live cable ends were buried in a fifteen foot crater into which the



WHILE damage to British power plants during the blitz and V-bomb barrage was less than anticipated, many generating stations were hit, and hit hard.

In an interview published in the last issue of *Hydro News*, Harold Hobson, chairman of the Central Electricity Board of Great Britain, stated that the Grid system had been a blessing to the Old Land in the dark, grim days of war. When one plant was hit, he pointed out how it had been possible to bring in power from another plant.

Illustrations reproduced on these pages do not tell anything like the whole story of power plant damage in Britain. They do, however, give an impression of what happened when destruction and death hurtled down from the sky. Before returning to Britain, Mr. Hobson kindly gave the editor of *Hydro News* permission to reproduce these photographs—a courtesy which is gratefully acknowledged.

Included among these reproductions is the load chart for Coventry at the time of the bombing. In the words of

MAIN SWITCH gear in the Plymouth generating station was knocked out completely in the heavy blitz raid of January 13, 1941. National pool gear was shipped in immediately and an emergency station erected to carry on until repairs were effected.

BE TOLD



Thames flowed at every tide. New lengths were run in over the tops of sand-bags and repairs were effected within a few days.

Mr. Hobson, this chart would have been bad news for Hitler for it shows how quickly electric service was restored after the raid.

Another reproduction directs attention to the layout of the wartime Control Centre of the Central Electricity Board. In this connection, it can now be revealed that in one of the earliest raids on London, the emergency control room for South East England and the East England areas of the Grid was rendered uninhabitable. Although the main control room at Bankside escaped serious damage, most of the adjacent buildings were demolished. As a result, it was decided that safer accommodation should be secured for the Control Centre and equipment. The place selected was located in the depths of two disused lifts or elevator shafts at an underground station.

The equipment in the National Control Room, it is stated, consists of a line diagram showing the main Grid circuits frequency and time error indicators and recorders; and indicating and recording meters for most of the main

(Continued on page 20)

SMASHING AT electrical installations throughout England, Nazi planes were all out to disrupt important services. This tower on the Melksham-Swindon line was damaged, but there was no interruption to transmission.



CROYDON ELECTRIC generating station took the full blast of a V-1 flying bomb. Although the damage sustained was heavy, the power plant was in operation again four months after it was hit.





V.C. HERO ACCLAIMED AT CIVIC RECEPTION

AMONG the proud members of Cpl. Fred Topham's family at the civic reception accorded the Toronto V.C. hero, was his brother, R. J. Topham, a member of the staff of the Commission's property department. Robert is shown (upper left) with his brother, Fred, and Mayor Robert H. Saunders of Toronto. Fred and the mayor look quite chummy. Mayor Saunders (lower left) greets Cpl. Topham, V.C., in front of the microphone at the City Hall. Standing beside Fred is his father, while among those seated are his sister, Mrs. Lenore Swanton, and Mrs. Mary Wilton. Arrival of the car, bearing the V.C. hero, at the City Hall is shown in the upper right picture.



J. H. LIGHTBODY TRANSFERRED

JOHN H. LIGHTBODY, for fifteen years superintendent of the Ridgetown rural power district and Ridgetown Public Utilities Commission, is taking over the position of Hydro superintendent at Lindsay on September first. Mr. Lightbody was born in County Down, Ireland, but received his education in this country. He served in the first Great War as lieutenant in the Kent Regiment, Reserve. As a registered, professional electrical engineer he entered the Commission 19 years ago, spent four years in the construction, engineering and municipal departments and then went to Ridgetown as local superintendent.

He played an active part in the community life of Ridgetown and was at various times secretary of the Playground Association, sat on the High and Vocational School Board and was president of the Rotary Club.

Mr. Lightbody was guest of honour recently at a farewell party at the home of Mr. and Mrs. W. H. Passmore, Ridgetown. Presentations were made by both the rural power district and the public utility commission.

FORTHCOMING LOAN VITAL: ALL OUT SUPPORT URGED

While the definite objective of the ninth Canadian Victory loan had not been announced at the time Hydro News went to press, it was obvious that the government would require ample funds to finance the critical period of conversion from a war time to a peace time economy and that the goal aimed at would be a high one. The last loan raised to finance the final war effort of this country had an objective of \$1,225,000,000, and it was over-subscribed by nearly a quarter of a million dollars. It will be as necessary—perhaps even more necessary—for Canadian citizens to rally to the support of the next loan issue which will be open to subscription between October 22 and November 10.

Pressing problems at home demand the immediate attention of our government, while considerable refinancing will have to be effected if the pledges of this country to assist in the rehabilitation of the liberated nations of Europe are to be carried out on schedule. In other words, it is emphasized, Canada, along with the United States and other allied nations, must make its contribution to general world recovery.

Come into the GARDEN

MID-SUMMER GARDENING

By Leon VanCleemput, Chief Horticulturist,
Dept. of Botany, University of Toronto

MUCH of the charm of gardening during these recent weeks will seem to have changed into the weariness of hard labour, and during the hot, lazy days of August the gardener may consider himself entitled to a vacation; yet, in fact, the month brings seasonable activities no less important than earlier months.

Routine work should be so well in hand by this time as to permit a slight let-up on such details as watering and weeding; but it should be borne in mind that even a few days of neglect will make things look ragged. And there is plenty of studying and planning to be done for another season.

Many evergreens have at present a "rusty look". Close examination will show that they suffer from an attack of red spider. To test for red spider hit branch tips on white paper. If red-gray pencil dots crawl around on the paper, they are the culprits. Frequent syringing of evergreens with a high-pressure stream of cold water from the hose may carry you through. If not, remember that standard spraying preparations are effective and that red spiders hate sulphur.

Propagation Time

Now is the time to divide pyrethrums. Taken up in August and split with a large knife, several new pieces may be made from one large root. The divisions will get full hold before winter if the work is done now. Shifted in late fall the roots will often die, while if transplanted in spring, they will flower but little. Other perennials, like perennial poppies, can be lifted and divided in August; easy propagation is possible by cutting the best roots in two inch pieces and inserting them in pots of sandy soil mixed with some peat. They will develop crowns and make fine plants for next season. Be sure, however, that these root pieces are put in right end up; this can be assured if the top is cut off straight and the base on a slant.

August is also the propagating month for many of our beautiful lilies. Lilies are increased in various ways. While seeds are today the principal means adopted for securing large batches, certain lilies do not produce seeds at all and others only sparsely. Bulblets are produced on the flower-

stems of some varieties, bulbils appear on others on the portion of the stems below ground, while most of the species produce offsets. In addition, flowerstems of a few varieties, removed immediately after flowering, will produce little bulbils, if laid in sand or peat-moss and kept moist. The methods of growing from seeds outside is not advisable here. Sowings under glass, in greenhouse or frame (April-May in coldframes) is preferred. Bulblets and bulbils form a simple and convenient method of increasing *Lilium Henryi*, *Regale*, *Speciosum*, *Tigrinum* and *Bulbiferum*. Sow them with as little delay as possible after the flowering season, best in coldframes. They will soon start to make roots and a few of the strongest will flower the second year.

In digging and moving bulbs, many scales are often detached. These can be planted in flats of spagnum moss and sand or peat and sand, best in a greenhouse, where small bulblets will form on these scales and increase to flowering bulbs.

Offsets are found clustered around the sides of the mother bulbs of most of the lilies, and at lifting time should be carefully removed, sorted and planted. Many of the larger ones will bloom the following season.

The last method of propagation is by stems. A few varieties, like *Testaceum* may be increased vegetatively by taking off the flower stalks as soon as the blooming period has passed. If laid in sandy loam, and lightly covered with peat and sand in a shaded place, kept moist and warm, tiny bulbs will start from the axils of the leaves. They can be later separated from the stem and pricked off into flats. Propagating your own lilies is a fascinating job.

Flowers and Vegetables for Shows

August and the beginning of September will be the time for our regular annual shows. I want to make an appeal to the members of the Horticultural Section to do their share in making the annual show really impressive. Though many of you have splendid gardens, the majority are not yet show-conscious. There is a great thrill to be got from participating in a keen competition. Besides that showing is very educational.

To some members, a flower or vegetable exhibit may appeal more than to others, but appeal is not enough. Certain rules are accepted by the official judges, so get a thorough knowledge of the exact wording of the schedule. If it calls for six flowers, do not show five or seven. If it

COME INTO THE GARDEN

(Continued from previous page)

calls for a vase, do not use a basket, and so on. Bad feeling has sometimes been caused by a worthy exhibit being disqualified for not conforming to the schedule. So when you compete be always a good sport.

The night before the show is the best time to cut your flowers with as long a stem as possible. Take a pail of water with you in the garden so that they can be plunged as soon as cut. Put your flowers in the cellar overnight covered with tissue paper. If you have no time at night, gather them early in the morning the day of the show and leave them in the water till you leave your home for the show. If you have private transportation they can stay in the water till you prepare your entries. This cutting of the flowers with long stems, allows you to give them the required length at the moment you put them in the show-containers. Cut always more flowers than you need in order to avoid disappointment through bruising, breaking or fading.

Wide Diversity In Flowers

There is a wide diversity of form, size and colour in flowers. Study the type of the different varieties required and select specimens conforming most nearly to it. The foliage as well as the flower should be free from all blemishes caused by insects, diseases or other means. Normal shape, normal colour, length, stiffness and straightness of stem, well furnished with foliage, if possible, are of the greatest importance, though certain flowers like scabious, annual poppies, larkspur and others are shown without foliage. When the stem counts as in 3 or 6 gladioli, asters, etc., flower stems should be uniform. Put tall-growing, long-stemmed flowers in tall containers, and use low containers for short-stemmed flowers.

Set-Up Should Be Natural

In case of bouquets and other decorative classes keep height of flowers in right proportion to that of container, which is approximately one and a half to one. For instance, if the vase is one foot, the bouquet should be one and a half feet, so that the whole display will stand two and a half feet. If the vase is six inches, the top of the flowers should not exceed nine inches above the rim of the vase, making it fifteen inches overall.

Arrange stems at approximately the angles they take when growing. Don't let erect growing flowers sprawl horizontally. The set-up should be natural. Only in table-centre decoration is a fancy arrangement accepted. Avoid crowding. Use too few rather than too many flowers. Jammed together they lose individuality of form and much of their charm.

Vary the length of the flower stems in decorative classes only, and blend bouquet with container, so they give the impression of a single unit. The effect is enhanced if some blossoms or foliage partially conceal the rim of the container.

Advice to Exhibitors

Let me add a few words for the exhibitors of vegetables, and I hope there will be plenty of them. Here too, perfection does not mean the largest vegetable, but the one

nearest to the standard type. Take parsnips and carrots, they can easily be grown two feet and more in length, but if they are coarse and blemished, they would have to take second place to smaller, cleaner specimens. The same for potatoes. They should be clean, firm, uniform, and with few eyes. Beets: good table size, deep red colour all through. Tomatoes: shape, firm texture, uniform, no cracks, no green bottom and especially not oversized. One pound tomatoes, deformed and cracked may be ideal for the kitchen, but have no chance in a show.

Follow these directions and also the following advice: show your flowers and vegetables for pleasure, education, discipline and improvement.

Preparation of the New Lawn

So often it seems much simpler to postpone the seeding of a new lawn until spring, but August and the early part of September offer many advantages. First, much of the value of early spring rains will be lost in achieving a lovely lawn. Then, grass thrives in the cool, moist weather of fall and becomes well established before freezing weather. This same cool weather likewise discourages weed growth and the new seed has fewer of these pests to contend with when sown at this time.

In making a new lawn the prime requisite is that the soil be thoroughly prepared. Six inches of good soil is absolutely necessary. After the area has been graded, it should be well harrowed and raked so that the soil will be free of all lumps, twigs, stones, etc., and will be as finely textured as possible. An inch of peatmoss worked into the top mixed with one of the reliable prepared fertilizers will do wonders. Do not make the mistake of plowing or spading the fertilizer in for it will then be buried out of reach of the grass roots.

It would, of course, be very poor policy to prepare an excellent seed-bed and then use an inferior grade of lawn seed. Therefore, sow the finest mixture of seed you can, using a special type of seed for shady portions of the lawn. Sow one pound of seed to 250 square feet and select a quiet day when the ground is moist and the weather comparatively cool. After the grass seed has been sown, rake the lawn lightly and then roll thoroughly. If the weather is dry, water the lawn with a fine spray until saturation, and repeat till the grass has a good standing.

September is also a good time to renovate an established lawn. First stir up the soil by giving the lawn a thorough raking. For this a sharp rake should be used, one that will cut into the soil. Mulch the lawn lightly with good topsoil, peat and fertilizer, then sow the seed. Rake and roll the same as when making a new lawn.

Fall Garden Planning

September is an ideal time to take stock of your garden. Notice which plants should be moved to a sunnier or more shady location for better development; which varieties are too large or too small for their present situation, and whether or not there will be some shrubs with colourful berries and bark to brighten the garden in winter. If your border lacks varieties which will add interesting touches of colour to the snowy garden, now is your opportunity to add some this year.

And last, but not least, order your bulbs early so next year's garden will be gay with their vivid hues.

TWO ENGINEERS FROM INDIA

STUDY HYDRO METHODS HERE

Syed Abdul Quader Of Hyderabad and Subramania Swayambu Of Calcutta Have Important Tasks In India's Postwar Irrigation And Power Plans

TWO of India's outstanding engineers are at present studying administrative and commercial aspects of Hydro in Ontario in preparation for important tasks they will undertake next year when they return to their own country where post-war plans include the construction of many hydro-electric developments.

These men, Syed Abdul Quader of the Independent State of Hyderabad, and Subramania Swayambu of Calcutta, are two of ten experienced Indian engineers who have been assigned to study methods in other countries. Four of these engineers are now in Great Britain and the other four are in the United States.

In India, according to both Mr. Quader and Mr. Swayambu, Hydro in Ontario is recognized as a pre-



Subramania Swayambu

eminent example of an efficient public ownership enterprise whose methods of operation have commanded widespread attention.

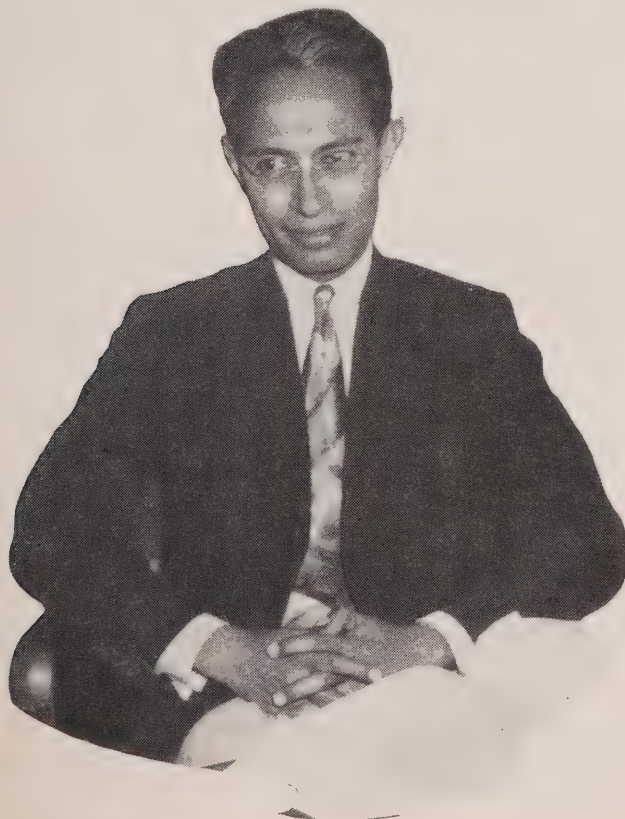
Seated at their desks in the Commission's seventeen-storey administration building on University Avenue, Toronto, they, in turn, recounted to Hydro News some interesting facts concerning India's problems and plans in connection with irrigation and power generation.

They pointed out that the Government of India plans to build more dams and create reservoirs of water which can be used both for irrigation and generation purposes. About 50 per cent of the plants in that country at present, Hydro News was informed, are the steam generation type. In future, however, the developments will mostly be of hydro generation.

In Hyderabad, the 16,000 horsepower Nizam Sagar development is now under construction and will be completed in about a year. At the same time, consideration is being given to the building of hydro plants at Tungabhadra, Godaveri, Krishna, Manair and Purna. It is expected that the energy provided by these developments will be utilized very quickly by various industries.

Mr. Swayambu, a B.Sc. graduate of Madras University, took a post-graduate course in electrical technology in the Indian Institute of Science at Bangalore, and is now with The Central Technical Power Board at Calcutta. This Board, which has only recently been formed, is a co-ordinating authority in the wider sphere of electrical development in India's projected post-war programme. At the

(Continued on page 25)



Syed Abdul Quader



Hydro HOME FORUM

by *Edithemma Muir*
HOME ECONOMIST

IF the homemaker has planned her menus carefully and then purchased the required foods wisely, one might think that her budget battle is over. Not so! She has still to protect the food and prevent budget leaks from wastage. To assure safe preservation of food in the home, the homemaker should remember that different kinds of foods require different storage conditions. Perishables such as milk and dairy products, meat and fish, eggs, fruits and green vegetables need refrigerator storage where they can be safely kept at constant temperatures below 50 degrees and above freezing. Some vegetables such as potatoes and root vegetables need not be refrigerated, but require cool ventilated storage room for preservation. Canned and packaged foods call for dry storage. To prevent spoilage, food must be stored in the home in such a manner that it is protected from high temperatures, excess moisture, household pests and growth of bacteria and moulds.

Waste of food also sabotages the budget. When vegetables are cooked in large quantities of water for a long period, much of their food value is poured into the sink along with the excess water. To block this form of sabotage of the budget, serve raw vegetables whenever possible, or cook them rapidly in a small quantity of water. Water in which root vegetables have been cooked may be used in soups, gravies or sauces. To prevent cooked foods from languishing as left-overs, check the refrigerator regularly and include odds and ends in meal planning. No apology is needed for serving the same food on two consecutive days if

it is good, but if your family likes variety, disguise it for its return engagement to the table.

To summarize this discussion:

- (1) Plan Wisely;
- (2) Buy Carefully;
- (3) Protect Safely;
- (4) Cook Properly.

If the budget shows an encouraging reduction in money spent for food, there is a ready-made place for your savings—War Savings Stamps and Victory Bonds.

Pickle Pointers

There are two ways of pickling—short process and long process. The short-process method applies to spiced fruits (crabapples, peaches, grapes and watermelon rind) and vegetable pickles (bread and butter pickles), which require only an overnight cooking at the most. Relishes (chili sauce, pepper relish and mustard sauces) are also made by the short-process.

The long-process method is quite another story. It is a fermentation applicable to brined or salt-cured pickles, dill pickles and sauerkraut. The curing should be done in a stone crock. The right amount of salt, which has not been iodized, has to be used. The crock should be left standing in a well ventilated room or basement and the top skimmed off occasionally while the vegetables are curing (usually 9 days to 6 weeks). This is not practical for apartment dwellers but an easy method for the busy householder.

* * *

Apple cider is best for pickling. It should be of good quality and strength

—4 to 6 per cent. acidity. If it is not strong enough, leave the top off the bottle and the action of the air will make it stronger.

* * *

Nutritive Food Using Less Meat

Meat is mainly a protein food which aids body building and tissue repairing. Other foods which contain protein value are milk, cheese, eggs, fish, dried peas, dried beans and nuts. Menu-planning is not difficult during meat rationing if you plan to serve good substitutes. The idea is to concoct important additions to serve with smaller portions of meat. Use skim milk and cheese with crumbs to add as stuffings and toppings. Make casserole dishes containing an ample amount of peas, beans or whole-grained cereals. Rich soups are excellent for a low-protein menu, especially cream-of-tomato, potato and others. Other ways to include milk are milk puddings, creamy vegetables and cream sauces. Cheese sprinkled over salads, boiled vegetables or casseroles add flavour and goodness.

Vegetable Plates for Meatless Days

1. Baked potatoes topped with cheese, cooked turnip tops and cauliflower.
2. Corn fritters, fresh cooked lima beans, baked onions.
3. Scalloped turnips, breaded eggplant and sliced tomatoes.
4. Jellyed vegetables with egg slices, pickled beets and cabbage salad.
5. Stuffed peppers, fried green tomatoes, boiled carrots.
6. Creamed celery, spiced chard, string beans.

#his and #hat

BY THE EDITOR

WE did not know whether to lament or rejoice when we found the other day that plus fours or knickerbockers and stockings, once the traditional togs worn by courtiers of the course, are now definitely out. When we raised the question, our friend thought we were referring to a golf handicap. He may be right at that! Our recollections are that these garments are on the plus side.

It all started when we were pressed to discover for ourselves why so many Hydro folk find golf such a pleasant form of relaxation after working hours. Not having played the Royal and Ancient Game and wishing to be perfectly orthodox if we did, we pointed out that we lacked plus fours and the other necessary equipment. We have excellent reasons for not discussing the remarks made by our friend. Sufficient to say, we stalked out of a golf club one Saturday afternoon attired in shorts, sport shirt, socks and shoes. Our guides and instructors on this memorable crusade were our friend and two ladies who approached the starting point with a nonchalance which we had to admire. "Got your tea?" one of them asked us. For a few seconds we were taken off our guard. We thought the game had something in common with cricket except that tea was served at the start instead of at the interval. Then the truth dawned upon us. This was not that delightful beverage which gives the spirit a lift but a wooden tee which is used to give the golf ball a lift.

Next, came our first lesson on The Grip. On our first effort we got our fingers so badly crossed and mixed up that we required assistance in getting them free for another try. This time one of the ladies took us "in hand"

and we began to make progress. Our enthusiasm, however, was somewhat curbed when we were reminded that the hold had to be applied to the club.

We learned many things that afternoon. For instance, addressing the ball does not call for a vocal effort but a deployment of one's physical stature—a kind of prelude to the attack on the ball. (Incidentally, we found ourselves using an entirely different form of address when we descended to the depths of the fourth bunker!)

However, to get back to the first tee, we planted our feet on the ground, as directed, and got our various fingers and thumbs entwined round the club, as directed. Being all set, we asked where the first green was located and then ascertained if there were a clause in the rules which forbade a player to overshoot a hole. Our mind at ease, we swung back the club in true professional style, keeping the left arm stiff and cracking the wrists at the top of the swing. Then we swung down. A second later a healthy piece of turf, about six inches square went hurtling through the air, leaving an excavation which would have qualified us for a position in Dave Forgan's construction department.

Looking as nonchalant as possible under the circumstances, we smiled at the gallery and muttered to ourselves. Before taking another swing we lit the trusty pipe. That did it. The ball went soaring to a great altitude and out over the course.

It was, in all, a memorable afternoon. There were times when the going was "rough", but we discovered something of the fascination golf holds for so many people.

We walked off the course with a neat seventy-nine on the card and two additional golf balls in the bag! Perhaps, we should mention it was a nine-hole course!

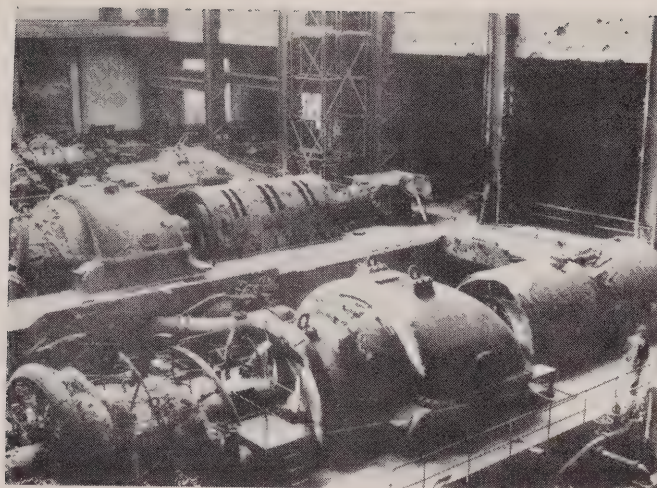
Much has been said and written on the subject of safety. Actually, it's

IT DOESN'T PAY

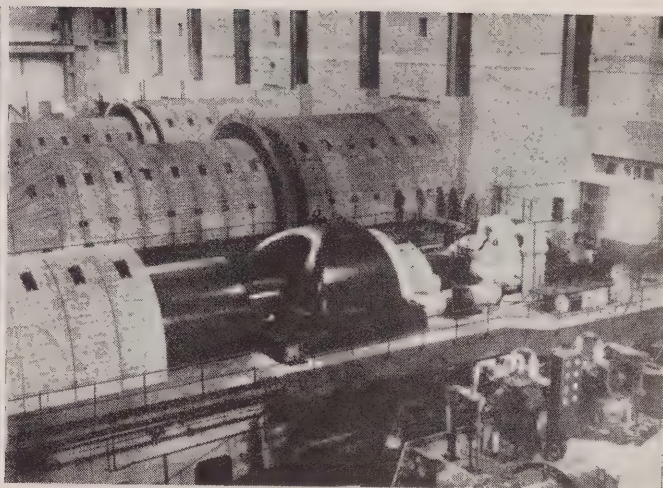
a costly business to be careless. For instance, a live man pays 25 cents for a shave, while it costs \$5 to shave a dead man in the morgue. A woollen overcoat may cost between \$40 and \$50 but a wooden one will run into three figures. A round-trip taxi fare to the theatre may click up between \$1.50 and \$2. A one-way trip to the cemetery costs a lot more. Therefore, it pays in more ways than one to be safety conscious when on the job, in the home or behind the wheel of a car.

Many Commission employees will recall Don Mackay, now a gunnery instructor and observer in the American Air Force, who was identified with the property department a number of years ago. Writing to his father, J. H. Mackay of the electrical engineering department, he says: "I have had three missions over Japan now. The last one was more exciting than the others. We got caught in a cone of searchlights and it was sure like being at the corner of King and Yonge streets without any clothes on at noon. There we were feeling very conspicuous and unnecessary. We didn't manage to shake them until we ducked into some clouds. I don't know why they didn't do more shooting at us under the conditions. Anyhow it didn't worry us for some reason as I have not much faith in the accuracy of their ack ack. I do not think this war can last much longer. Nobody can take what the Japs are getting and long survive. If they had any sense they would quit right now while they still have something to keep."

(And now, they have quit!)



SWEEPING UP the Thames at the opening of the heavy blitz in September, 1940, Nazi bombers blasted the Fulham power house in London, putting out of action 190,000 kws. of plant capacity. Adjoining Chelsea, the metropolitan borough of Fulham has a long stretch of river front which was of great assistance to the Luftwaffe in locating targets. All the principal utility services in this district were marked out for special attack and, during the blitz, were under a continual rain of high explosive bombs. When the turbine house at Fulham was restored, concrete coverings were placed over the generating sets to protect them against flying bomb splinters in future attacks. They served their purpose well. The illustration on the left shows the damage caused by bombs, and the reproduction on the right shows the same section of the plant after it had been repaired.



ALL-IMPORTANT SERVICE

Within recent years the hit-and-miss element has been removed from the work of recognized social welfare and charitable organizations, and today those agencies are operating on an efficient, business-like basis and rendering an all-important service to society.

This fact was strongly emphasized by Lt. Colonel Irving P. Rexford of Montreal, Chairman of the Community Chest Division of the Canadian Welfare Council, when announcing that Community Chests, Welfare Federations and United Welfare Funds would launch their joint campaigns this year between September 1 and October 10 to raise a total of over six million dollars.

This money, Colonel Rexford explained, will be used to aid the work of many organizations including Family Welfare Associations, Settlements, the Y.M.C.A., the Y.W.C.A., Boy Scouts, Girl Guides, Salvation Army, Victorian Order of Nurses, Canadian National Institute for the Blind, the Children's Aid Society and others.

HUNTSVILLE

(Continued from page 10)

above sea level and its brisk, invigorating air and scenic grandeur attract many thousands of tourists the year round. Starting in the spring, there is the fishing season. In July and August the "sun worshippers" put on their "coat of tan." As the month of August wanes the leaves of the many maple and other trees don their red and golden hues which sometimes give them the appearance of being on fire. This period, extending until October, is often referred to as "maple leaf time." Following the hunting season, Christmas ushers in the winter activities, and clear blue skies, an abundance of fleecy snow, cross-country trails and sloping hills make Huntsville a paradise for skiing enthusiasts.

First To Foster Winter Sports

Huntsville boasts that it was the first municipality in Ontario to foster and develop winter sports. During the last few years, it is estimated, there have been practically as many tourists at the hotels in the winter as during the summer season. Week-end excursions or "ski specials" are arranged, and thousands of holiday seekers enjoy the exhilarating Canadian winter at its best.

HELP BOOST HOSPITAL FUND



A FINANCIAL transaction that gives considerable satisfaction to both parties was recorded by the cameraman as shown above. W. J. Greves, general secretary of the Ontario Hydro-Electric Club, hands a check for \$2,300 on behalf of the club to R. A. Laidlaw, chairman of the Board of Trustees for the Hospital for Sick Children. This contribution was given along with the best wishes of Hydro employees for the future of the fine new Hospital for Sick Children that will soon be rising on University Avenue.



A SUNNY corner of one of the Canyon school class rooms. The little boy second from the front is an Indian lad who lives near the Colony.

TEACHER RECALLS EXPERIENCES

(Continued from page 13)

is a strong emphasis on health habits and the value of a good diet. The children are encouraged in outdoor sports and there is keen competition among the various teams in the colony. If anyone does get sick there is a trained nurse on the spot and a well-equipped hospital. If a doctor is needed the patient can be taken into Cochrane on a covered railway scooter. Or in case of an emergency a doctor can be brought out.

High Academic Record

Mr. Green mentions the very high academic record of the school. For the past three years, he says, all candidates at entrance and upper school examinations have been successful. There are several reasons for this. One is that there are so few other attractions that school becomes inevitably the main interest. There is very little temptation to "play hookey" when there is nothing to do. And long winter evenings give plenty of time for reading and studying. The children have an unbounded curiosity about the world outside. They read a great deal and listen to the radio for current happenings. Once every two weeks there is a movie provided for the colony and it is chosen with care so that the children aren't subjected to the usual sort of trash that a city child gets.

Teachers in Envidable Position

The children are taught to be self-reliant. One way is by being "on their own" on camping trips into the bush. They are also taught to take their places as members of



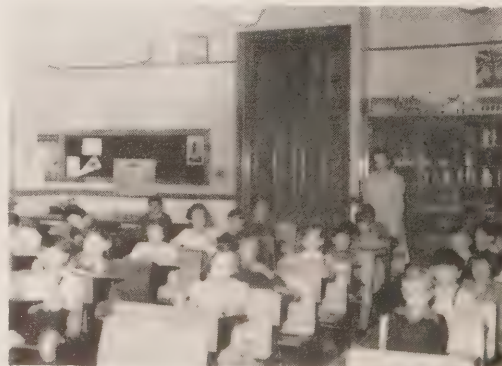
IT'S RECESS time at the Colony's school. Here one of the teachers is trying to keep the line in good order.

the community. For example they provide the programme for the annual Christmas entertainment, they take charge of the library and its records and at one time they even got out a community paper.

The teachers hold an enviable position, they are looked to for all sorts of ideas which will have a stimulating influence on the progress of the community. And in return they receive the sort of warm hospitality that only the north knows how to provide. They probably live at the staff house where they have private rooms and comforts that would be hard to surpass in the city. There is certainly nothing "primitive" about the electrically-run house or the excellent food either!

Has Post-War Plans

The colony is not only "holding its own" from a numerical standpoint, but, like every other place, it has its own postwar plans. The stork does his bit in providing new settlers and there are plans for attracting a tourist trade because the settlement lies on the road to the famous duck-shooting swamps of Moosonee. Anyway they already admit to growing pains and say that they could very well do with a third teacher and a new wing to the school!



ANOTHER CAMERA glimpse of one of the Colony classes in session is shown here.



"We were delighted with your Chapter on Chatham in the June issue and must compliment you on the thoroughness of your historical information and the pleasant breezy method of presenting it. Undoubtedly Chatham's development has been greatly assisted by its association with hydro-electric and we are looking for a continuance which will involve consumption of considerably more power in the future."—P. E. Valteau, secretary-manager, The Chatham Board of Trade.

"It was with a great deal of interest that I read your Chapter on Chatham in the Hydro News for the month of June, 1945. Articles such as these are the very best publicity for the municipalities of Ontario, and should make us more conscious of our neighbour's progress and advantages."—N. B. Cummins, president, The Chatham Board of Trade.

"On behalf of the city of Chatham, I wish to thank you most sincerely for the kindness of your organization in giving so much publicity to our city in the June issue of Hydro News. We are quite proud of Chatham and are anxious to let outsiders know what a fine municipality we have. We have recently received much assistance from your organization in arranging better lighting for some of our streets and the appearance of the city has been greatly improved."—Ralph D. Steele, mayor, Chatham.

TWO ENGINEERS FROM INDIA

(Continued from page 19)

present time, Mr. Swayambu is busily engaged in the H.E.P.C. municipal department, studying the municipal and rural problems that he will likely encounter when he returns to his own "stamping ground."

Mr. Quader, who comes from Hyderabad, the largest Independent State in India, has the distinction of having won a European States scholarship. He went to England in 1929, and studied at the University of Manchester, where he completed a three-year honours course in engineering, and received a special scholarship, which enabled him to study for another year in England. He is now hydro-electric engineer with the State Government of Hyderabad. For the past three months he has been in the Commission's promotion department studying the commercial and promotional aspects of Hydro's operations here.

Friendly, personable and interesting conversationalists, both men have made many friends since coming to this country, and although they are here to do a specific job, they might be regarded as unofficial ambassadors of goodwill.

BACK ON THE JOB

(Continued from page 9)

Lieut. Bell became interested in making models of ships. He has now completed a professional-looking model of a frigate that he calls H.M.C.S. Prince Rupert. It is 38 inches long and he calculates that it took 600 spare time working hours to complete. Lieut. Bell is now back at his desk in the Electrical Engineering Department, which he first entered in 1929.

Served In Last War

Representing the army is Lieutenant-Colonel Purvis, an army man who served in France and Belgium in the last war. He joined the Queen's Own Rifles in 1925 and when war broke out he was called up, first to do duty on the General Staff in M.D. 2, in Toronto. For the next three and a half years Colonel Purvis was stationed on the west coast, latterly as General Staff Officer, Grade 1, of the Pacific Command. This was a man-sized job, for the Pacific Command embraced all active army units and establishments and reserve units on the west coast and included the whole of British Columbia and the Yukon. Colonel Purvis joined the Hydro in 1919. His work here and his previous army experience made him particularly suitable for such a responsible post. Last May he was transferred to the reserve of active officers with the rank of Lieutenant-Colonel, in order to return to his work in the Electrical Engineering Department.

Held Important Posts

Squadron Leader Molyneux is also in the Electrical Engineering Department which he joined 26 years ago. For the five war years he held a series of important posts with the R.C.A.F. The airforce is no novelty to S/L Molyneux for he flew in the last war, first in 1917 with the R.F.C. and in 1918 with the R.A.F. and won the D.F.C. for distinguished service. In this war he was asked to handle many administrative jobs, including that of Commanding Officer of a recruiting centre in P.E.I., Administrative Officer for Works and Buildings Branch in Victoria, Administrative Officer in the Directorate of Works and Buildings at Airforce Headquarters in Ottawa and Commanding Officer of No. 1 Construction and Maintenance Unit in Toronto, which was organized to facilitate the rapid construction of various building projects at all flying stations and schools in the Province of Ontario.

After Pearl Harbour

His year in Victoria was of special interest, S/L Molyneux says, because it came just after Pearl Harbour when the west coast defenses were being hurriedly prepared. He was in charge of the administration of the construction of all airports and flying stations over an area which ranged from the American border to the Queen Charlotte Islands. It was a hectic time, but at least, S/L Molyneux says, it gave him a good chance to get his hand in at flying again, for communication between the bases in this area was mostly by air. The last year of the war he was Personal Staff Officer to Air Vice Marshal A. T. M. Cowley, O.B.E.



"A jerk with a smirk to see Mr. Burke!"

Professional golfers and some high-ranking amateurs have developed a game of such unerring precision that they are said to be experiencing difficulty in finding courses that will test their skill. With the rest of us the difficulty seems to be to find the skill to test the courses.

* * *

The House Wife's Lament

Oh where, oh where did those raspberries go—
So tangy, and sweet, and delicious?
I thought there'd be plenty—the forecast said so;
But perhaps it was all just fictitious.

When I went to the store, they told me
"No more!"

And I turned to go home in a daze.
I know it's the war. I don't want to deplore;
But they'd only been on sale three days.

* * *

Aladdin had a wondrous lamp
That could bring forth a genie;
But Hydro doth his magic cramp
And make his power look weenie.

* * *

An American visitor, unaware that it was a meatless day, dropped into a Toronto restaurant for lunch.

"We have creamed Restigouche salmon," the waitress told him, "or you can have stewed mussels."

"Well," remarked the guest, as he placed his order for salmon, "there's one thing about you Canadians—you're frank about your wartime meats. I've been in joints where the cut-ups masticated like they'd been cut off of rodeo steers; but before I hit this town, I never heard of any restaurant that was honest enough to call them stewed muscles."

* * *

"I'll never be able to rent those summer cottages," mourned the crest-fallen owner. "I've just been up there. The woods are full of skunks."

"That's easy," the resourceful commission agent assured him. "We'll tell the whole truth and then there won't be any come-back. We'll put it this way. . . two cottages at Barbary Point—ideal bathing, and a perfume from the scented pine woods that will linger long among your most treasured possessions."

* * *

DOWNWORDS PUZZLE

LAST MONTH'S SOLUTION

1	2	3	4	5	6	7	8	9	10	11	12
C	A	M	E	R	O	N	F	A	L	L	S
O	N	I	X	A	V	I	I	R	A	O	T
D	T	L	A	I	E	P	L	C	R	N	U
F	I	L	G	N	R	I	L	T	C	G	R
I	C	I	C	B	S	G	E	I	E	V	G
S	I	O	E	O	T	O	T	C	M	A	E
H	P	N	R	W	R	N	E	C	O	C	O
E	A	A	T	A	R	D	I	U	A	N	
R	T	I	T	R	I	S	R	T	T	R	
I	I	R	I	O	N	V	O	C	H	I	O
E	O	E	O	V	E	E	L	L	E	O	E
S	N	S	N	T	D	R	E	E	D	N	S



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"When you hear the musical note—will someone please phone us the correct time? Our clock is slow!"

When his parachute failed to open properly, an American air-borne marine is said to have plummeted 2,000 feet into the ocean, with little brake on gravitation, and to have escaped without serious injury. Not so long ago a man boarding a street car fractured a vertebra when he turned his head sharply to gape at a pretty girl on the sidewalk. One might deduce from these occurrences that, in its ability to withstand shock, a "leather neck" is to be preferred to a "rubber-neck."

* * *

It was in the old lawless days in the Midwest. Two ranch hands in love with the same girl were about to shoot it out when the sheriff came galloping up at top speed.

"Stop!" he shouted. "It's all off. That cowboy you both trusted has beat it for Chicago with the stakes."

* * *

"By the way," smiled the patient as the doctor was about to leave. "I'm not going to insult you by paying you for this call, but you may rest assured that I have not overlooked you in my will."

The doctor paused at the door. "Do you know, I think I shall make a slight alteration in that prescription I just made out for you."

“MAY and September,” mused Professor Perplexus, thumbing the reel of his fishing rod, “those are the months for fly fishing. With all that backward weather I guess there weren’t too many of the big fellows rising in May, so there should be more of them left for September. If any of you Downwords fans still have your vacation coming, we’ll jog along to the Barrett Chute Hydro power plant on the Madawaska river and see what’s doing. That’ll be a good place to start from anyway. So pack up your silver doctors, your brown hackles, your white millers and your coachmen in your old tin box and we’ll get moving. And we’ll take along this month’s puzzle to provide diversion en route.”

1. Scots who hae wi Wallace bled
will find good fishing in its
neighbourhood.
2. If you consider the Great Lakes
as inland seas, then you
might apply this name to the
island groups of Georgian Bay.
3. This is a rare tree in Ontario.
It is found only in the south-
west corner of the province.
4. Sport fans throw these fruity
bouquets at faltering home
town teams, but they're mighty
nice to eat with cream and
sugar. They grow wild in
Ontario, too.
5. Hydro on the farm—or any-
where else.
6. You shoot 'em. He stuffs 'em.
7. Paradise for the fly fisherman.
(2 words).
8. The high bush varieties grow
wild in Ontario—generally
around muskegs and beaver
meadows.
9. A sea gull on the lakes.
10. It slaps your face and tears
your clothes as you struggle
through the bush.
11. An attribute of Indian guides,
hermits and trap-jawed busi-
ness executives, but certainly
not of women or politicians.
12. Ontario in autumn dress (femi-
nine).

PRIMARY LOAD

HORSEPOWER

1945
1944
1939

2,500,000

2,000,000

1,500,000

1,000,000

500,000

0

JAN. FEB. MAR. APR. MAY JUNE JULY AUG. SEPT. OCT. NOV. DEC.

Month	1939 (Horsepower)	1944 (Horsepower)	1945 (Horsepower)
JAN.	1,280,000	1,980,000	2,040,000
FEB.	1,220,000	1,960,000	2,050,000
MAR.	1,180,000	1,950,000	2,090,000
APR.	1,170,000	1,900,000	2,080,000
MAY	1,150,000	1,940,000	2,060,000
JUNE	1,180,000	1,930,000	2,030,000
JULY	1,100,000	1,820,000	1,940,000
AUG.	1,130,000	1,870,000	1,940,000
SEPT.	1,250,000	1,930,000	1,940,000
OCT.	1,380,000	1,960,000	1,980,000
NOV.	1,430,000	1,990,000	2,000,000
DEC.	1,470,000	2,030,000	2,030,000

AREA SERVED BY	MAXIMUM 20-MINUTE PEAK H.P.		PER CENT INCREASE
	JULY, 1945	JULY, 1944	
SOUTHERN ONTARIO SYSTEM .	1,962,117	1,831,426	+ 7.1
THUNDER BAY SYSTEM .	120,777	114,075	+ 5.9
NORTHERN ONTARIO PROPERTIES	222,822	186,626	+ 19.4
TOTAL	2,305,716	2,132,127	+ 8.1

SOUTHERN ONTARIO SYSTEM	2,113,424	1,987,572	+ 6.3
THUNDER BAY SYSTEM	129,893	126,273	+ 2.9
NORTHERN ONTARIO PROPERTIES	<u>260,456</u>	<u>223,489</u>	+ <u>16.5</u>
TOTAL	2,503,773	2,337,334	+ 7.1

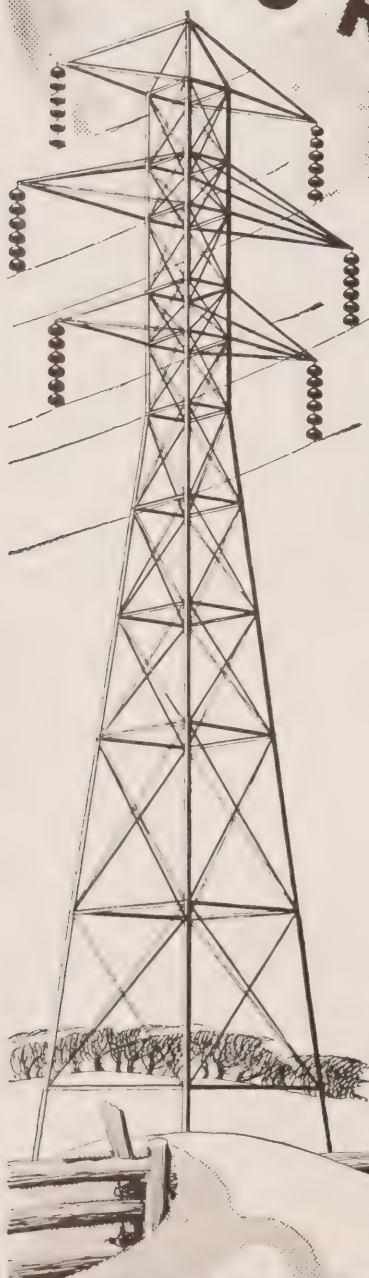
MUNICIPAL LOADS, MAY, 1945

SOUTHERN ONTARIO SYSTEM

SOUTHERN ONTARIO SYSTEM			H.P.		Popula- tion		H.P.		Popula- tion	
NIAGARA DIVISION (25-Cycle)										
	H.P.	Popula- tion	Erie Beach	16	21	Palmerston	635	1,400		
Acton	1,700	1,903	Essex	592	1,886	Paris	1,995	4,604		
Agincourt	213	P.V.	Etobicoke	8,028	V.A.	Parkhill	253	1,029		
Ailsa Craig	132	487	Exeter	795	1,654	Petrolia	996	2,768		
Alvinston	120	649	Fergus	1,501	2,759	Plattsville	160	P.V.		
Amherstburg	1,071	2,704	Fonthill	175	860	Point Edward	1,678	1,199		
Ancaster Twp.	423	V.A.	Forest	583	1,562	Port Colborne	1,800	6,928		
Arkona	72	403	Forest Hill	7,179	12,172	Port Credit	956	1,934		
Aurora	1,411	2,821	Galt	12,012	15,126	Port Dalhousie	1,052	1,599		
Aylmer	1,041	1,985	Georgetown	2,098	2,452	Port Dover	475	1,790		
Ayr	199	760	Glencoe	219	763	Port Rowan	114	700		
Baden	605	P.V.	Goderich	1,665	4,674	Port Stanley	584	824		
Beachville	864	P.V.	Granton	73	P.V.	Preston	4,230	6,656		
Beamsville	539	1,227	Grimsby	906	1,988	Princeton	146	P.V.		
Belle River	179	1,200	Guelph	12,364	23,074	Queenston	150	P.V.		
Blenheim	572	1,873	Hagersville	1,258	1,524	Richmond Hill	516	1,295		
Blyth	144	662	Hamilton	166,176	164,719	Ridgetown	624	1,986		
Bolton	196	629	Harriston	499	1,292	Riverside	1,395	5,235		
Bothwell	149	683	Harrow	620	1,092	Rockwood	153	P.V.		
Brampton	3,228	6,157	Hensall	169	686	Rodney	144	758		
Brantford	22,473	31,622	Hespeler	2,966	2,938	St. Catharines	30,243	34,541		
Brantford Twp.	1,304	V.A.	Highgate	84	322	St. Clair Beach	115	138		
Bridgeport	190	P.V.	Humberstone	578	2,831	St. George	206	P.V.		
Brigden	96	P.V.	Ingersoll	3,588	5,757	St. Jacobs	355	P.V.		
Brussels	156	784	Jarvis	197	513	St. Marys	1,679	4,009		
Burford	257	P.V.	Kingsville	622	2,453	St. Thomas	8,485	17,045		
Burgessville	53	P.V.	Kitchener	29,677	35,465	Sarnia	6,558	18,599		
Burlington	1,668	3,925	Lambeth	127	P.V.	Scarborough Twp.	4,663	V.A.		
Burlington Beach	464	1,474	LaSalle	278	907	Seaforth	1,078	1,782		
Caledonia	417	1,430	Leamington	1,864	6,048	Simcoe	3,013	6,304		
Campbellville	45	P.V.	Listowel	1,560	2,984	Smithville	224	P.V.		
Cayuga	158	700	London	43,018	81,567	Springfield	77	382		
Chatham	7,226	17,184	London Twp.	542	V.A.	Stamford Twp.	3,026	8,275		
Chippawa	345	1,228	Long Branch	1,406	4,258	Stoney Creek	240	933		
Clifford	115	491	Lucan	190	643	Stouffville	321	1,198		
Clinton	664	1,879	Lynden	118	P.V.	Stratford	7,781	17,163		
Comber	160	P.V.	Markham	341	1,175	Strathroy	1,595	2,834		
Cottam	87	P.V.	Merlin	103	P.V.	Streetsville	218	701		
Courtright	52	355	Merritton	10,797	2,916	Sutton	245	949		
Dashwood	110	P.V.	Milton	1,565	1,915	Swansea	3,032	7,100		
Delaware	76	P.V.	Milverton	430	994	Tavistock	678	1,080		
Delhi	606	2,430	Mimico	2,887	8,785	Tecumseh	404	2,391		
Dorchester	93	P.V.	Mitchell	774	1,670	Thamesford	244	P.V.		
Drayton	144	528	Moorefield	63	P.V.	Thamesville	202	816		
Dresden	461	1,525	Mount Brydges	160	P.V.	Theford	118	598		
Drumbo	107	P.V.	Newbury	35	298	Thorndale	83	P.V.		
Dublin	35	P.V.	New Hamburg	669	1,441	Thorold	3,076	5,284		
Dundas	3,072	5,245	Newmarket	1,974	3,800	Tilbury	1,536	1,923		
Dunnville	1,534	3,916	New Toronto	10,595	9,469	Tillsonburg	1,554	4,602		
Dutton	268	830	Niagara Falls	11,539	20,371	Toronto	375,638	657,612		
East York Twp.	9,083	41,578	Niagara-on-the-Lake	918	1,764	Toronto Twp.	3,556	V.A.		
Elmira	1,421	2,069	North York Twp.	10,422	V.A.	Wallaceburg	4,951	4,802		
Elora	489	1,185	Norwich	468	1,301	Wardsville	48	221		
Embro	133	420	Oil Springs	177	541	Waterdown	262	867		
Erieau	148	218	Otterville	103	P.V.	Waterford	464	1,294		
						Waterloo	6,622	8,968		
						Watford	390	1,023		

MUNICIPAL LOADS, MAY, 1945

	H.P.	Popula- tion		H.P.	Popula- tion		H.P.	Popula- tion
Welland	13,264	14,899	Neustadt	46	43	Kemptville	337	1,230
Wellesley	135	P.V.	Orangeville	827	2,558	Kingston	16,495	29,545
West Lorne	253	768	Owen Sound	6,326	13,559	Lakefield	529	1,301
Weston	5,505	6,234	Paisley	126	530	Lanark	96	686
Wheatley	228	761	Penetanguishene	1,026	4,177	Lancaster	52	570
Windsor	56,405	118,040	Port Carling	145	520	Lindsay	4,034	8,345
Woodbridge	683	1,100	Port Elgin	484	1,415	Madoc	194	1,130
Woodstock	9,507	12,339	Port MacNicoll	84	950	Marmora	137	1,004
Wyoming	103	538	Port Perry	293	1,175	Martintown	38	P.V.
York Twp.	19,541	77,175	Priceville	10	P.V.	Maxville	117	811
Zurich	159	P.V.	Ripley	111	420	Millbrook	131	749
(66½-Cycle)			Rosseau	26	305	Morrisburg	343	1,484
Bronte	176	P.V.	Shelburne	263	1,053	Napanee	1,557	3,241
Oakville	1,491	4,243	Southampton	556	1,467	Newcastle	197	701
Trafalgar Twp.	569	V.A.	Stayner	273	1,106	Norwood	172	710
GEORGIAN BAY DIVISION			Sunderland	85	P.V.	Omeme	191	630
(60-Cycle)			Tara	111	510	Orono	100	P.V.
Alliston	468	1,700	Teeswater	187	973	Oshawa	18,285	26,610
Arthur	177	1,089	Thornton	41	P.V.	Ottawa	39,045	150,816
Bala	149	355	Tottenham	100	532	Perth	1,872	4,187
Barrie	4,400	9,599	Uxbridge	357	1,480	Peterborough	15,835	24,977
Beaverton	222	941	Victoria Harbour	65	979	Pictou	1,348	3,400
Beeton	89	617	Walkerton	1,067	2,534	Port Hope	2,866	4,997
Bradford	339	1,041	Waubushene	96	P.V.	Prescott	1,661	3,318
Brechin	44	P.V.	Warton	320	1,750	Renfrew	407	5,673
Cannington	172	761	Windermere	41	117	Richmond	68	428
Chatsworth	74	333	Wingham	804	2,149	Russell	70	P.V.
Chesley	561	1,812	Woodville	66	439	Smiths Falls	3,203	7,741
Coldwater	176	545	EASTERN ONTARIO DIVISION			Stirling	344	947
Collingwood	2,668	6,249	(60-Cycle)			Trenton	5,916	8,183
Cookstown	91	P.V.	Alexandria	238	1,976	Tweed	301	1,181
Cræmore	132	661	Apple Hill	43	P.V.	Warkworth	83	P.V.
Dundalk	232	686	Arnprior	1,357	4,019	Wellington	200	948
Durham	371	1,874	Athens	102	626	Westport	110	725
Elmvale	151	P.V.	Bath	37	325	Whitby	1,544	4,236
Elmwood	57	P.V.	Belleville	8,497	15,498	Williamsburg	100	P.V.
Flesherton	58	452	Bloomfield	109	636	Winchester	421	1,017
Grand Valley	152	645	Bowmanville	2,840	3,850	THUNDER BAY SYSTEM		
Gravenhurst	1,255	2,261	Brighton	380	1,462	(60-Cycle)		
Hanover	1,456	3,190	Brockville	5,391	11,112	Fort William	16,120	30,370
Holstein	20	P.V.	Cardinal	375	1,602	Nipigon Twp.	216	V.A.
Huntsville	1,250	2,943	Carleton Place	1,864	4,143	Port Arthur	24,012	24,217
Kincardine	756	2,483	Chesterville	278	1,094	NORTHERN ONTARIO		
Kirkfield	25	P.V.	Cobden	121	643	PROPERTIES		
Lucknow	351	856	Cobourg	2,524	5,907	Nipissing District		
MacTier	123	V.A.	Colborne	239	960	(60-Cycle)		
Markdale	194	776	Deseronto	222	1,002	North Bay	5,420	16,013
Meaford	699	2,759	Finch	87	396	Patricia District		
Midland	4,948	6,754	Frankford	160	1,095	(60-Cycle)		
Mildmay	133	764	Hastings	152	823	Sioux Lookout	300	1,967
Mount Forest	530	1,936	Havelock	136	1,103	Sudbury District		
			Iroquois	297	1,123	(60-Cycle)		
						Capreol	250	1,660
						Sudbury	10,021	36,724



● Remember the snow storm of last December? It tied up traffic and most services in Southern Ontario . . . except Hydro.

Stores, restaurants and homes ran short of food and fuel. Newspapers missed editions. Even on busy city streets, high banks of snow hampered traffic for weeks.

Through it all, your Hydro continued to serve . . . by supplying an uninterrupted flow of electricity to our transportation systems. Radio powered by Hydro brought news of the world to your home . . . warned children of closed schools . . . helped to restore order amid confusion. Elevators in buildings continued to operate. Lights, electric ranges and other appliances, including electrically controlled furnaces were maintained in operation because of your dependable Hydro service.

Maintenance of Hydro transmission and distribution lines is a challenging task, particularly in times of storm. Men fight miles of drifts and climb poles in the face of wind-whipped blizzards to keep Hydro coming through. And without Hydro, modern life in this province would be paralyzed. Winter and summer, day and night, often in remote places that can only be reached by dog team or canoe, the men of Hydro constantly battle forces of nature to keep up the enviable record of service that has been established in Ontario.

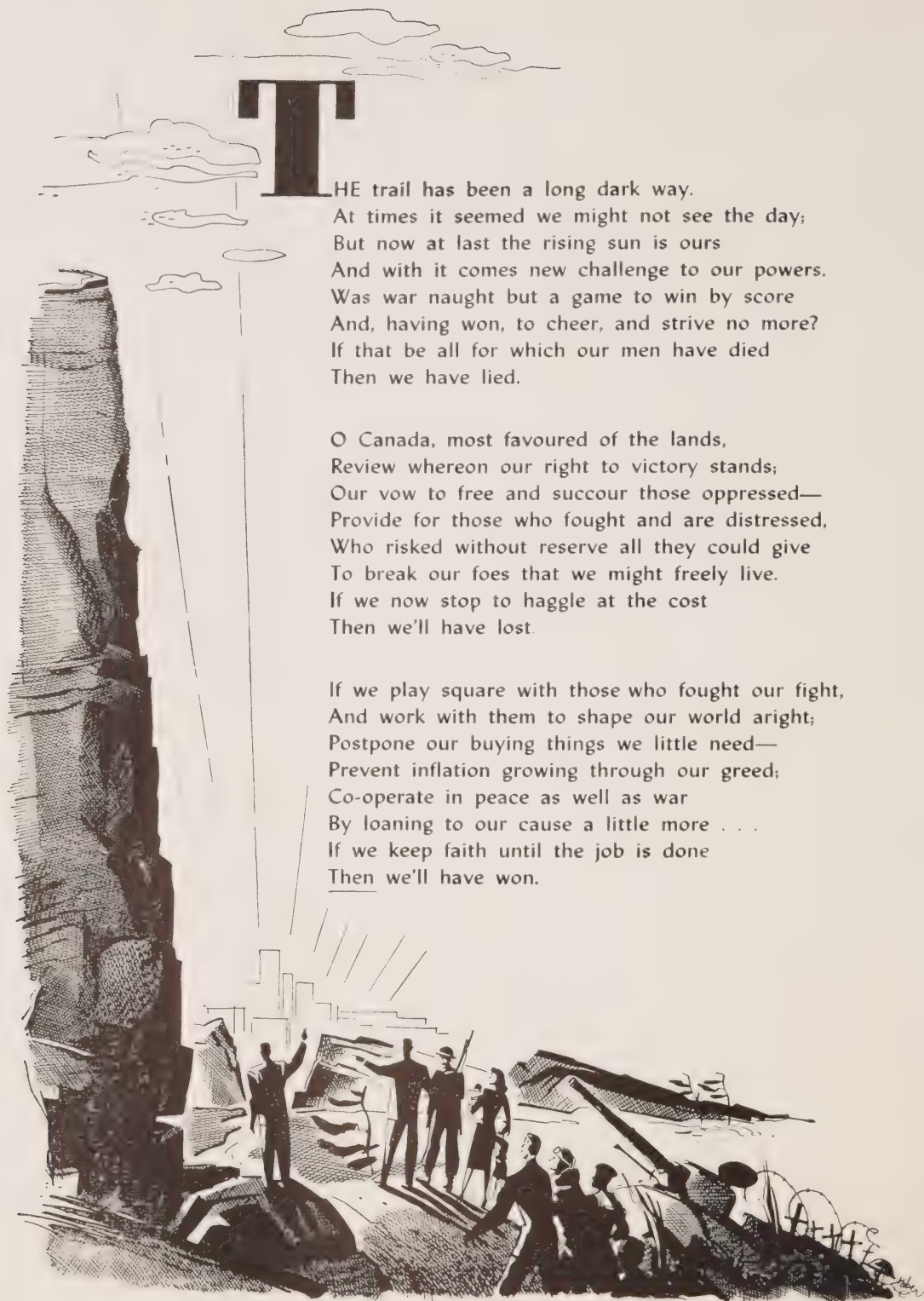
It is only 75 years since the dynamo was invented. Already most of the homes and industries of Ontario rely on Hydro for countless benefits, and substantial progress has been made in the electrification of farms. Tomorrow will bring ever-expanding demands, which your Hydro will be prepared to meet. Plan now to enjoy electricity more extensively in your postwar living.

THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO

HYDRO *News*



ON EDGE



T

HE trail has been a long dark way.

At times it seemed we might not see the day;
But now at last the rising sun is ours
And with it comes new challenge to our powers.
Was war naught but a game to win by score
And, having won, to cheer, and strive no more?
If that be all for which our men have died
Then we have lied.

O Canada, most favoured of the lands,
Review whereon our right to victory stands;
Our vow to free and succour those oppressed—
Provide for those who fought and are distressed,
Who risked without reserve all they could give
To break our foes that we might freely live.
If we now stop to haggle at the cost
Then we'll have lost.

If we play square with those who fought our fight,
And work with them to shape our world aright;
Postpone our buying things we little need—
Prevent inflation growing through our greed;
Co-operate in peace as well as war
By loaning to our cause a little more . . .
If we keep faith until the job is done
Then we'll have won.

BUY MORE VICTORY BONDS

THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO



THE HYDRO - ELECTRIC POWER COMMISSION OF ONTARIO

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THE FRONT COVER



BECAUSE he may have realized somehow that he had been selected by Hydro News as the subject of the Thanksgiving cover this year, this fine turkey may have felt that it was worth his while to "stick his neck out." Therefore, having an axe to grind, he climbed on to his unusual perch where he, no doubt, felt very much "On Edge."

Volume 32

October, 1945

Number 10

CONTENTS

	Page
Harvest - - - - -	2
Page Three - - - - -	3
Georgian Bay Convention - - - - -	4
Hydro In India - - - - -	7
Dr. H. G. Acres Passes - - - - -	10
Windsor Pre-Sells Post-War Equipment - - - - -	11
Saying It With Turkey! - - - - -	13
District No. 3 O.M.E.A. Convention - - - - -	17
Hydro Home Forum - - - - -	21
Letter From Germany - - - - -	22
This And That - - - - -	25
Lighter Lines - - - - -	26
Downwords Puzzle - - - - -	27
Monthly Load Summary - - - - -	27
Municipal Loads - - - - -	28



THIS SUN-and-shadow picture of the full-eared shock of Ontario grain set against tranquil autumn fields reminds us that over the whole globe, we are among the few with our beautiful countryside untouched and our rich harvest unravished by the most devastating war in history. We give double thanks for the harvest that will nourish our own people and that can be shared with the hungry of the world.



* *Page Three* *

THANKSGIVING

THANKSGIVING day, observed this year throughout Canada on October 8, has long been celebrated as a seasonal festival. Normally it is a day when people, in diverse ways, mostly in feasting and merrymaking, express to a beneficent Providence their gratitude for the fruits of the harvest. This year, however, the first peace-time Thanksgiving after six years of cruel and unrelenting war takes on a wider and deeper significance.

* * *

As we sit down to our turkey dinner and the various dishes that accompany it, we have a good deal more to be thankful for than the food before us. The war is over, and the ravaging hand of a ruthless invader has left no mark on our land. None of our fair cities has been destroyed, and we have been spared the terrors of the concentration and the prison camps for which decent men have no name. Then, too, we have reason to be thankful that we can rejoice with sons, or brothers, or relatives, who have happily returned from far-flung battle-fields. Perhaps at our neighbour's table there will be vacant seats. Our friend's smile, even his proud bearing, may only be a mask for the sorrow he feels at the loss of those dear ones who have made the supreme sacrifice.

* * *

As a nation, and individually, what are we going to do to repay the debt we owe to those who have laid down their lives that the freedom we cherish may flourish—to show that we are really thankful for the blessing of life and material prosperity we continue to enjoy? The answer, if one could hear it, would be a simple one: "Carry on."

* * *

During the war Canada gave of her best. For a country with such a comparatively small population, a striking and exemplary contribution was made to the Allied cause.

With no slackening of effort, prepared for some minor inconveniences and possibly some further sacrifices, we shall have to carry on from there. Through co-operation, through working with others towards a definite goal, we have sustained a mighty national effort. If the same spirit prevails during the difficult transition period ahead, if we don't fall back into the old paths of laissez-faire—that will be practical evidence of our thankfulness for the mercies that have been shown unto us, and perhaps next Thanksgiving we shall be able to partake of our turkey dinner as just part of the joyous old autumn festival without serious reflection or misgiving.

UNFINISHED BUSINESS

WHILE the war is officially over, Canada, like other allied nations, is now confronted with the tremendous task of putting her own house in order while meeting her fraternal and moral obligations to countries less fortunate.

It takes money, and plenty of it, to clean up this unfinished war business. Thousands of men now stepping off the gang planks have to be trained to resume worthwhile positions in civilian life; the sick and wounded who are returning to their native soil on stretchers must be cared for and food, clothing and other necessities have to be provided to relieve suffering humanity in the liberated but war-ravaged countries.

These are but a few of the compelling reasons why Canadians are being asked to support the Ninth Victory Loan in the same way in which they responded to previous loans.

From the standpoint of the individual, Victory Bonds are still the finest and safest investment in this country which offers unrivalled opportunities for the security and happiness of all patriotic and far-sighted citizens.



**Scarborough Frequency Changer To Link Division
With Main Power Arteries By 1947—Assured
Of Additional Power By Next Year—Com-
mission's Accomplishments And Projected
Programme Outlined By J. J. Jeffery
And M. J. McHenry**

MORE power will be supplied the Georgian Bay division as soon as a 25,000 kv-a. frequency changer set can be erected at Scarborough, and the fullest possible co-operation will be given local commissions in their efforts to meet the electrical requirements of consumers.

These assurances on behalf of The Hydro-Electric Power Commission of Ontario were given at the largely attended annual convention of the Georgian Bay Municipal Electric Association, District No. 2 of the O.M.E.A., held on September 5th at Thunder Bay Beach near Penetanguishene. The principal speakers were M. J. McHenry, director of promotion, and J. J. Jeffery, municipal engineer, both of the H.E.P.C. They were introduced by the president and chairman, R. J. Beaulieu.

Another Power Link Planned

Questions were asked at the convention as to when a more ample supply of power would be available to the Georgian Bay division.

DELEGATES TO the convention of the Georgian Bay Electric Association, gathered at Thunder Bay Beach near Penetanguishene, September 5. This photograph was taken during a recess.

The factors in the prevailing situation were summed up by Mr. Jeffery who explained that increased power demands in that division could be met either by further hydraulic developments or by a transfer of load from other divisions. At the present time, he pointed out, there were two proposed sites on the Muskoka river—at Sandy Gray and Go Home Bay. Together, these would have a capacity of 17,000 horsepower. For the moment, however, the alternative of providing load from the Southern division which derived its power from major, large capacity generating stations, seemed more feasible, both with regard to economy and the conditions which the labour and material market imposed. Already the Georgian Bay division was tied into the Niagara division at Hanover, where a frequency changer set has been installed, and the Commission proposed another link, Mr. Jeffery stated.

Next year, Mr. Jeffery announced, the Eastern Ontario and Georgian Bay divisions, which both use 60-cycle current, will be linked up by the extension of transmission lines. This entails the building of a steel tower line from Oshawa to Scarborough and the construction of a 110,000

volt line from Scarborough to Fergusonvale. In 1947 a frequency changer set will be installed at Scarborough. This will enable the Commission to transfer some of the power now coming into Leaside from Ottawa Valley and other eastern plants to the Georgian Bay division, and Mr. Jeffery assured his audience that there would then be ample load to meet the requirements of all consumers in that district.

A 110,000 volt transmission line, Mr. Jeffery stated, will also be built from Fergusonvale to Hanover, where a frequency changer set is already installed, thus completely linking up the Georgian Bay system with the arteries of power. This was part of the general plan of the Commission to make loads interchangeable throughout the whole newly consolidated Southern system so that power could be transferred wherever required.

More Power Next Year

"How soon may we expect this additional power to be available?" asked C. J. Halliday of Chesley.

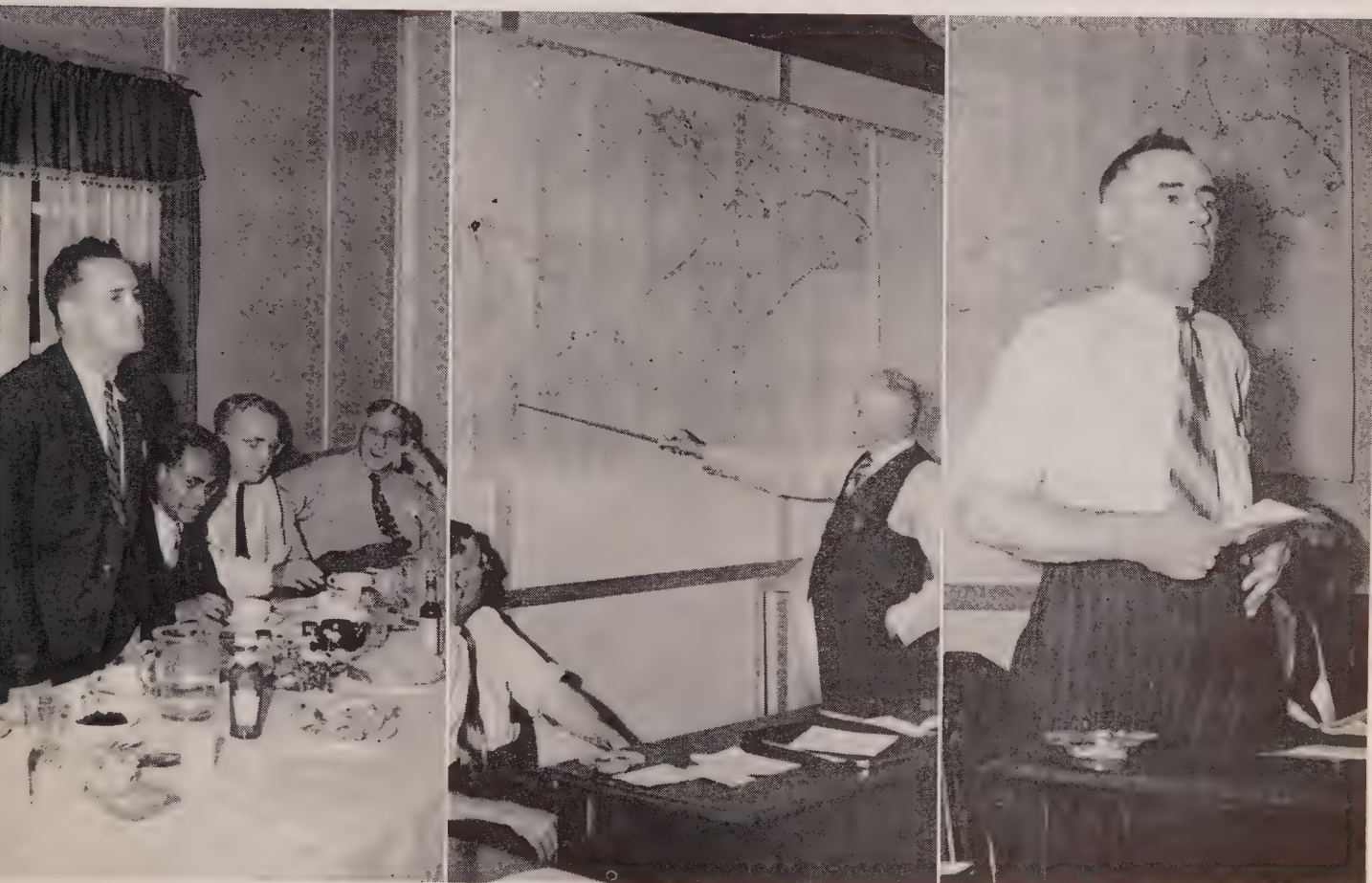
Mr. Jeffery smiled, and replied that they planned to complete and co-ordinate an electrical structure in Ontario that would be second to none, and there was no reason to doubt that schemes for further rural and urban electrification would be fully carried out. But the Commission

was not a magician, he warned. Things were just at the beginning of the transition period from a wartime to a peace-time economy. Manufacturers were in the throes of reconversion, and there was a time element to be considered in the obtaining of equipment and supplies which would enable the Commission to translate its far-reaching plans into concrete realities.

"I want to be perfectly frank with you," the speaker said. "As far as we can see now, the frequency changer at Scarborough will not be installed until 1947. We have to wait on the manufacturer. But," he added, "I think I can promise you an additional 5,000 or 6,000 horsepower from that link-up with Eastern Ontario by July, 1946. That ought to help."

The need for a little patience before the millennium in electrical services could be expected was further stressed by Mr. McHenry at the evening banquet at the Thunder Bay Inn attended by the Mayor of Penetanguishene, Salem Dube.

"In Southern Ontario," the speaker said, "power loads, greatly increased by war demands, have for some years put to use practically all available developed power. To serve these loads, the transmission and distribution facilities and the generating station capacities have been taxed up to,



MAYOR SALEM DUBE (left) has words of welcome from the progressive town of Penetanguishene. J. J. Jeffery, municipal engineer, H.E.P.C., (centre), shows how more power will be brought to Georgian Bay district; while "Bob" Beaulieu (right) introduces the other Commission speaker, M. J. McHenry, the widely-known director of promotion.

and in some cases, beyond, their proper economic limits. In the immediate future it will be necessary to repair and recondition many sections of the Commission's plant. Later, it is expected that load growth will be resumed and that new power resources and facilities will be required. In addition, many of the old facilities provided 20 or 30 years ago have become inadequate for the enlarged system it is expected to develop."

Apart from structural repair and maintenance, the present time, Mr. McHenry pointed out, was a very busy one for the Commission as a vast amount of planning for future electrical extensions, urban and rural, had to be undertaken. These plans could be effectively realized only by the closest co-operation between the Commission on the one hand and manufacturers and consumers on the other. Hydro intended to give its fullest possible support to the various local commissions throughout the province in preparing the ground so that the services planned would operate, without undue delay, to the benefit of the consumers concerned.

Mr. McHenry briefly reviewed the Five-Year Plan for rural electrification. This entailed the construction of over 7,000 additional miles of rural lines which would bring Hydro services to approximately 58,000 new rural consumers of whom 32,000 will be farmers, he pointed out. It involved an estimated expenditure by the Commission of some \$22,000,000 on labour and materials, with the Ontario government providing a grant-in-aid to cover 50 percent of the cost. It was estimated that existing and new rural consumers would spend \$40,000,000 on wiring their homes and farms and on equipment; while 5,000 men would be employed during each of the five years by the Commission and the electrical industry.

Mr. McHenry went on to point out that the record of the supply of electricity in the cities, towns and villages of Ontario under Hydro operation was already an exceptional one. The average cost of energy to the domestic consumer had been lowered from over 5 cents a kilowatt-hour to less than 1.2 cents a kilowatt-hour and was still on the way down. Reduction in rates had, of course, been made possible largely through increased use. This had risen from a low of 250 kilowatt-hours per consumer per year to a present high of 2,200 kilowatt-hours. With the completion of the Five-Year Plan, it was expected that the average annual consumption by individual domestic consumers would be in the neighbourhood of 3,000 kilowatt-hours.

In adapting electricity to their every day needs, the first thing for consumers to look to was adequate wiring, Mr. McHenry emphasized. This, of course, applied not only to new construction but also to already existing services. Inadequate wiring was one of the contributing reasons why the electric range was not in more common use in the smaller homes of the province.

"The Commission," Mr. McHenry stated, "is at present investigating the possibility of the supply in quantity of low-priced electric ranges. This, coupled with an adequate wiring and re-wiring programme, should enable a large proportion of our domestic consumers to enjoy the benefits of such a service."

There was a great demand at the present time for the flat-rate hot water heater. In spite of the shortage of materials, the Commission was doing all it could to meet immediate requirements. At the same time, the Commission's engineers, he said, were working on the development

(Continued on page 12)



GUESTS AT the convention banquet listen to an octet of singers from Orillia. At the right, M. J. McHenry tells Syed Abdul Quader of India something about the great part co-operation has played in the development of Hydro in Ontario.

SEES INDIA ON THRESHOLD OF GREAT EXPANSION ERA

Commission Set Up To Tackle Difficult But Fascinating Hydro Problems—Potential Resources Estimated At Over 26,800,000 Horsepower

By SUBRAMANIA SWAYAMBU

(Mr. Swayambu is one of India's noted young engineers who is at present with the Commission studying administrative and commercial aspects of Hydro in Ontario.—THE EDITOR.)

SINCE my arrival in Toronto last May, my many friends in Ontario Hydro have evinced great interest in electrical developments in India, and I have been asked to write for Hydro News something about the water power resources of that great country and how they are being utilized. It will be appreciated that, with the space at my disposal, this article can, in no sense, present a complete picture of Hydro in India with its vast field of potentialities. I shall try, however, to focus on some of the "highlights" that may be of interest to the general reader.

India is a land of great mountains and rivers and is blessed with a substantial rainfall. Most of the rain, however, occurs in the monsoon period, which extends from June to September, and the flow in most rivers is, therefore, heaviest during the second half of the year and diminishes rapidly in spring. Only such rivers of the north which are fed from the snowclad peaks of the towering Himalayas have a well sustained all-year-round flow.

For centuries past India's rivers have been utilized for the great irrigation systems of the plains, and in any scheme of power development two important considerations arise:—

(1) Storage reservoirs of substantial size will have to be provided to sustain the flow during dry months.

(2) River flow for irrigation purposes must take precedence over the requirements for power supply.

Fortunately for India, storage sites are readily avail-



BHIRA, NEAR Bombay, India, is the location of the hydro-electric plant shown in this reproduction. Operated by the Tata Power Co. Ltd., it contains five 17,500 kw. water-wheel generators operating under a maximum gross head of 1,655 feet.

able in most places and, subject to irrigation requirements, it has been ascertained that many rivers can be harnessed for power. Although no detailed survey of the potential capacities has as yet been made in all parts of India, certain preliminary studies have indicated that the ultimate possibilities can be placed well over 20 million kw. At the present time, only half a million kw. have been developed in a number of hydro-electric installations of widely varying capacities—from a mere 500 to 85,000 kw.

India abounds in possibilities for both high and low head developments. Most of the existing high capacity installations utilize the high heads available on the mountain ranges where the rivers originate and flow down to the plains. The chief examples are the Pykara Power plant on the Nilgris (Blue Mountains) in South India with a head of 3,090 feet, and three installations of Tata Group near Bombay with heads of about 1,700 feet and the Uhl river scheme in the Punjab with a drop of 1,800 feet. A number of other large installations have adopted lower heads, what may more appropriately be called medium heads, of the order of 100 to 400 feet—like the Mysore or Mettur schemes on the river Cauvery in South India. At the other extreme, schemes with heads as low as 9 to 14 feet have been developed such as the plants constructed on a series of 13 falls on the Ganges Canal in the United Provinces, in the north of India.

Design And Equipment Of Developments

Almost all the major schemes include storage reservoirs, which in certain cases utilize heavy gravity dams intended for combined irrigation and power purposes. In a few instances, like the Tata or the Punjab projects, the diversion of the water flow has been achieved by tunnels up to about 15,000 feet long, cut through solid rock with a view to securing the maximum head.

With schemes of widely varying conditions, diverse types of equipment have necessarily been adopted—the pelt-on wheels for high head, the reaction type, both horizontal and vertical layout for medium heads, and the Kaplan turbines for very low heads. The general design and layout of stations are mostly on the American pattern, while the equipment in some of the more recent installations has been supplied by British engineering firms.

In view of the fact that the Hydro installations are situated mostly in the hill districts and thus are remote from the load centres in the far-off plains, high voltage transmission has been adopted to a large extent. The highest voltage so far used is 132 kv., in the Punjab, while 110 kv. and 66 kv. lines are fairly common, extending to nearly 200 miles in certain sections of the country.

Frequency And Supply Voltage

Practically all the power systems have 50-cycle supply. The only major exception is the Mysore Hydro in South India (earliest of the kind, inaugurated in 1902) which operates on 25 cycles, with a part 60-cycle lighting supply for the two major cities in the state. Even here, a scheme of gradual conversion to 50 cycles is on hand. The secondary supply voltage in the majority of places is A.C. 400 volt, three phase for power and A.C. 230 volt, single phase (between a grounded neutral and one of the phases) for domestic purposes. In certain areas, particu-

larly in the cities like Calcutta or Madras, both A.C. and D.C. (440/220 volts with a neutral midwire) are still existent and in certain isolated state or town installations, one runs into an odd supply voltage, but the general trend is to line up with the standard system of A.C. 50-cycle 400/230 volts.

Hydro Versus Steam Power

The relative position of the power plant operated by hydro, steam (coal fired) or oil (diesel) and the energy produced for the whole of India during the year 1944 are as follows:—

	Hydro	Coal	Oil	Total
Installed capacity in million kw. ----	0.5	0.7	0.1	1.3
Energy produced in million kw. ----	2,200	1,650	150	4,000

(The figures are approximate)

Although coal deposits in India are in no sense super-abundant, adequate supplies are available in certain districts in Northern India in close proximity to the industrial city of Calcutta. Power supply in most of the big cities, which was developed by private utilities, almost invariably started with coal-fired stations (except in the case of Karachi which has a diesel plant) that, in course of time, have grown in size. Thus, the Calcutta Electric Supply Corporation operate three interconnected stations with an aggregate plant capacity of 200,000 kw., and it is worthy of mention here, that their latest station has three 30,000 kw. steam turbo-sets, generating at 33 kv. In view of the fact that fuel has to be transported over long distances to coal-fired stations in far-off places in the country and that coal is a wasting asset which has essential uses for metallurgical and other processes, the future trend should overwhelmingly swing to hydro power with the ever increasing range of economic distances for extra high tension power transmission. Nevertheless, for the reason that water flow conditions in certain rivers are seasonal, it is inevitable that some at least of the future schemes will have to be combined hydro-thermal development.

Grid Schemes And Interconnection

The present development in India includes about 600 installations varying in size from a mere 50 kw. to 87,500 kw. A great many of these, particularly the coal-fired stations, are intended for supply to a densely populated local town or a limited area. In the late twenties, three provincial governments (Madras, the Punjab and the United Provinces) however, started hydro-electric installations in their respective provinces forming the nucleus of what may be called grid systems covering as large an area as possible. In this, they have succeeded to a considerable extent, although much remains to be done in the way of increasing the density of lines and service in the districts already outlined by the network, not to say of the very large area lying outside their field. Mention may also be made of similar grid schemes in operation in the Mysore and Travancore States and the North-West frontier province.

In regard to interconnection, India has achieved very

little, in view of the isolated nature of the developments, and the only system is the Madras grid, in which three stations situated about 100 and 200 miles apart are interconnected, by means of 66 kv. and partly by 110 kv. transmission lines. However, it is expected that interconnection will play an important part in the large scale developments of the future.

Rural Electrification

With the advent of the grid systems, the provinces and states concerned have evinced some interest in the matter of supplying power to the rural areas. India is really a country of villages and a great majority of the population is sustained by agricultural employment. On account of the lower economic standard of the farmers, it is not likely that the utilization of electricity will have the same varied functions that we see in Ontario. Nevertheless, there are certain specific but vital applications in which electric power will play a great role to increase the general prosperity of the rural areas. These are, (1) well irrigation by electric pumping; (2) promotion of small

scale industries, as a measure of decentralization of major industries and (3) such essential applications as refrigeration and preservation of foodstuffs. In course of time, with the general improvement of the standard of living and prosperity of the farmers, the wider appreciation of the various other uses of power will follow.

In the field of rural electrification, India has a very great lesson to learn from Ontario as many other nations have done in the past. This is the important part that the state will have to play in ensuring that power is made available "at cost" to as many towns as possible and to give lower cost service to rural consumers by providing as large a subsidy as possible. It is becoming increasingly evident, that the various provinces and states in India are beginning to appreciate this and are making plans for widespread rural electrification in their postwar programmes.

Public Or Private Ownership

A large proportion of India's power plant, especially hydro, is now publicly owned. From the extensive pro-



gramme of electrification now projected, it would appear that the Central Government which is analogous to the Dominion Government in Canada, and the various provincial and state governments will develop and operate exclusively all electricity projects. The existing power plants at present owned by the private corporations may eventually pass into public ownership at the termination of their franchise periods or, in any event, they will be allowed to continue in individual cases only under strict government control.

Technical Personnel In India

Do you have enough Indian electrical engineers and skilled electricians in India? This is one of the questions frequently asked. Yes, we have plenty of technical personnel—Indians who have passed through Indian or foreign engineering colleges and technical institutes and also the class of technicians who have come up through workshops and power stations. In the earlier days of power development, European and American engineers were largely responsible for the design and construction of many power station projects. At the present time, however, most of the senior positions are filled with distinction by Indian engineers, and it is noteworthy that the chief engineers of several provinces and states and of the powerful Tata Hydro-Electric Company are Indians. In order to acquire first hand knowledge of the developments and the engineering practice obtaining in the leading Hydro utilities of other countries, the Government of India have initiated a scheme for sending out young engineers to England, United States and Canada.

Plans For The Future

Plans are now being worked out under the lead of the Central Government in India for that vigorous hydro development which is so necessary for the large scale industrialization of the country and the augmentation of the standard of living of the masses. At the present time, the total energy generated by all the public utility power stations in India, corresponds to only 10 kwh. per capita per annum as compared to 3,300 kwh. for Canada. Even a modest objective of increasing the per capita index for India to 100 kwh. per annum, would involve power plant installation to the extent of 8 to 10 million kw. With a view to accelerating a programme of such large magnitude, the Central Government in India have recently formed a powerful three-man commission, known as the Central Technical Power Board. The chairman of this Board is the able British engineer, H. M. Matthews, and of the two members, one is a leading Indian engineer and the other is an American engineer of high standing. The Board has before it a very extensive and ambitious programme, which in broad outline plans:—

- (a) To organize nation-wide hydrographic and power surveys.
- (b) To initiate, co-ordinate and assist in the power development schemes of the provincial and state governments.
- (c) To introduce standard practice in the power supply industry and to initiate schemes for research and technical training.

In conclusion, it must be said, that although com-

DR. H. G. ACRES PASSES

A former chief hydraulic engineer with the Commission and a pioneer in water-power developments in Ontario, Dr. Henry Girdstone Acres died in Toronto on September 4 at the age of 65.



Born in Paris, Ontario, he was the son of Jonathan William and Eliza Jackson Acres. He graduated from the University of Toronto in 1903, and for some two years was associated as an engineer with the Canadian Niagara Power Company at Niagara Falls. He joined The Hydro-Electric Power Commission of Ontario at its inception in 1906 and was given charge of a general water power survey of the province.

This was followed in 1908 by his appointment as engineer in charge of surveys and location for the 110,000 volt lines of the H.E.P.C. Niagara system. Three years later he became chief hydraulic engineer for Hydro.

One of Dr. Acres' greatest achievements was the part he played in the planning and supervision of the Queenston-Chippawa development undertaken by the Commission in the early twenties. With the exception of the Panama Canal, this was regarded at the time as the greatest hydraulic undertaking on the continent.

Was Frequently Consulted

After the completion of the Queenston-Chippawa development, Dr. Acres entered private practice with headquarters at Niagara Falls. For advice in hydraulic matters he was at various times, consulted by the Province of Alberta, the Saskatchewan Power Commission, the City of Toronto, the Reid Newfoundland Company, the Niagara Falls Suspension Bridge Company, the International Paper Company and many others.

In 1924 Dr. Acres received from his alma mater the degree of Doctor of Science, and in 1943 he was further honoured with the award of the Julian C. Smith Memorial Medal by the Engineering Institute of Canada for outstanding contributions to the development of the Dominion. He was a member of the Engineering Institute of Canada, the Society of Civil Engineers and the American Institute of Electrical Engineers, and also of the Institute of Civil Engineers of Great Britain.

A public funeral service for Dr. Acres was held in St. Catharines. He is survived by his widow, the former Augusta Louise Helliwell, whom he married in 1908.

paratively little has been achieved in hydro development so far, India is on the threshold of a great era of expansion and the young engineer is confident that he will soon be able to catch up with the stupendous strides made in the West and in due time contribute his share to world progress in the field of modern science and engineering—true to the tradition of his forefathers who had given the world a culture, a civilization and a philosophy all their own.

WINDSOR HYDRO SELLS EQUIPMENT NOW: TO MAKE DELIVERY WHEN MANUFACTURED

By L. S. TREUGE,

Hydro Division, Windsor Public Utilities Commission

WITH victory in Europe looming up last Spring the Hydro division of the Windsor Utilities Commission began to think normally again. The war-born shortage of power and the necessity for conservation had done strange things to an organization whose watchword was load-building. For almost three years our policy had been completely reversed and now, with a sigh of relief, we could see the resumption of normal activities ahead.



L. S. Treuge

There were, and still are, obstacles. Nevertheless, we decided to sell electric ranges we didn't have, and electric washers on which manufacturers' delivery dates were vague. The selling task was not difficult. People had been yearning through all the dark years for the return of peace. Peace would be finally signalized to them by the acquisition of a piece of household equipment which wartime restrictions had denied them. That, even though they could not obtain delivery, they were permitted to take the first step in this direction, by placing an order, was a potent reason why many people in Windsor today have made a start on their personal post-war planning with Hydro.

Ours is not an aggressive merchandising policy as such. Advertising has featured the fact that Windsor's

1945 rate reduction has brought "all-electric home" operation to a new low cost. The theme that range operating current is in most cases billed at the "low wholesale" 2nd rate has been consistently repeated. In most advertisements we have indicated in a small enclosure that we would accept orders for priority delivery of electric ranges. More recently we have expanded this service to include electric washers and refrigerators.

This plan is not merely a name or prospect list-making device. None but bona fide orders are accepted. A consumer in order to obtain a priority delivery rating is obliged to make a cash down payment. In some cases payment in full is made; in some, regular monthly payments are agreed upon; and in many, cash on delivery is arranged. We do not attempt to influence this decision—we only insist on a down payment.

With the return of many veterans from Europe we have been confronted with the very real problem of providing cooking equipment for many families now re-united and setting up housekeeping. We have found that the overwhelming choice of these new and re-united home-makers is for an electric range. To date, we have on loan over 100 pieces of reconditioned electrical cooking equipment which will remain rent-free in the customers' homes until we are able to make delivery of new electric ranges.

Small deliveries from range-manufacturers allow us to keep part of this stock of "loaners" rotating. This and

(Continued on page 20)



A SECTION of the main office of the Windsor Utilities Commission is shown above. On the left are the cashiers' wickets and credit and adjustment counter. The right illustration shows the appliance counter and information desk.

GEORGIAN BAY CONVENTION

(Continued from page 6)

of more efficient types of equipment for water heating purposes.

"Hydro in Ontario," said Mr. McHenry, in conclusion, "is a service to provide the home, the office, the farm and the factory with an adequate supply of electricity at low cost. Part of our energies should, therefore, be devoted to the informing and educating of the public in the proper methods of use of electrical energy and the efficient operation and maintenance of equipment. No better contribution can be made to public relations than for Hydro to see that all consumers are supplied with the fullest information in this respect in a courteous manner and in a spirit of helpfulness."

Co-operative Spirit Impresses Visitors

Present as guests of the convention were Syed Abdul Quader of Hyderabad, and Subramania Swayambu of Calcutta, two Indian engineers, who are studying the Hydro system with the Commission in Toronto. Enthusiastically received, they told the delegates that the chief impression they would carry back to India was the spirit of co-operation and good-will that prevailed everywhere between Hydro and the community interests it served.

Safety Measures Urged

During the sessions of the convention, Wills Maclachlan, head of the employees relations department of the H.E.P.C. addressed the delegates briefly on the importance of safety measures for the prevention of accidents to Hydro and other workers. Employees everywhere should be trained in the safe method of doing their job and in artificial respiration. Special equipment for rescue work, except possibly in the case of men overcome by gas, was unnecessary. All that was required was proper tuition, the speaker said. The prevention of accidents through adequate instructions was part of the duties of all public utility commissions.

Ontario, Mr. Maclachlan stated, had the lowest accident rate in the utility business on the North American continent. By close attention to preventive measures this fine record could be maintained.

Officers Re-elected

After the usual routine business coming before the convention had been dealt with, the following officers and directors were re-elected for the ensuing year: honorary president, R. D. Boyes, Alliston; president, R. J. Beaulieu, Penetanguishene; first vice-president, G. F. Hutcheson, Huntsville; second vice-president, Walter Dixon, Arthur; secretary-treasurer, H. S. N. Denef, Hanover; directors: Mayor W. G. Case, Owen Sound; C. J. Halliday, Chesley; D. L. Regimbal, North Bay; W. E. Theaker, Paisley; J. F. Craig, Barrie; S. R. Sargeant, Orillia; A. J. Walker, Wingham.



COMBINING A Sherlock Holmes acumen with the tactics of experienced bush rangers, these two lads, Gordon Noseworthy left, and Louis Fillion, employed at a Hydro station on the Mattagami river, successfully tracked down an escaped German prisoner and delivered him over to the R.C.M.P.

DIES AT CLARKSON

CLARENCE CHARLES BODLEY, 64, who for almost thirty-five years, was identified with the production and service department of The Hydro-Electric Power Commission of Ontario, and who was a former resident of Toronto, died recently at his home at Clarkson, Ontario. For the past twenty-six years he had lived at intervals in Clarkson, and had retired in 1942 because of failing health.

Mr. Bodley was born near Todmorden, Ontario, where he took a keen interest in church and fraternal organizations.

Surviving are his widow, Emma Jane King Bodley; a daughter Mrs. William Knapp, Aurora, and two sons Fred and John Bodley, both of Clarkson.



ANNUAL GOLF FIELD DAY

For the second consecutive year, Harry Hustler won the Dr. Hogg trophy in the H.E.P.C. annual golf field day played this year at the Weston Golf and Country Club on September 13 with 56 entrants taking part.

The winners of other events were: Norm Falkner, the Gaby cup; runner-up, W. Cunningham; Jack Morgan, the Littlejohn cup; runner-up, J. F. Scace; J. A. Mackay, the McGrath cup; runner-up, Russ Laurie.

Following the dinner and presentation of prizes, the following officers were elected for the ensuing year: president, Roy Harmer; vice-president, W. Cunningham; secretary, R. H. Roe; treasurer, P. G. Weir; committee, G. F. Drewry, J. P. Morgan and K. J. Brown.



A CASE of "Before and After." On the left is a little turk just out of his shell; on the other side, we have him "weighing-in" just before Thanksgiving time.

By Grace J. Carter, Assistant Editor

Preparations for Thanksgiving dinner quite often start in February—at least that is if the menu includes turkey, and, speaking about turkey, Hydro News was on hand earlier in the year when some 2,200 "potential" Thanksgiving dinners made their debut.

The "blessed event" took place at the Vespra Turkey Farm near Barrie, where ten shiny, white electric incubators are in service. Each unit, which has a capacity for 2,250 eggs, has a rating of 70 amps., at 115 volts, and is equipped with a $\frac{1}{2}$ horsepower motor. The power used at the Vespra property is supplied by the H. E. P. C. through the Barrie rural power district.

At this well-kept, modern farm, hatching of turkey eggs is done twice a week for six months, starting in February. The number of eggs hatched varies from 2,000 to 6,000 a week, May being the peak month. These eggs are in the electric incubators for twenty-five days, during which time the temperature and humidity, both very important factors in the poultry industry, are thermostatically controlled. During the incubation period the eggs are turned at regular intervals, just as the mother turkey would do, only in this case it is done mechanically. This enables the embryo to develop normally and naturally and prevents sticking to the shell.

On the twenty-fifth day the eggs are transferred to

the hatchers or drying machines and left there for another three days. At the end of that time there is a "mass movement" of pecking and cracking shells until the baby turks emerge, a little bedraggled, but cheeping and chirping vigorously. These little bits of wide-eyed, soft down, greyish-brown in colour and flecked with dull yellow, are known as broad-breasted bronze turkeys.

Electricity Important Factor

Once considered a "risky" business, it is now generally recognized that much of the hazard of turkey raising has been eliminated since electricity and improved methods of sanitation have been employed. The first eight weeks in a turkey's life are considered to be the most difficult, as the poults are very susceptible to sickness and disease. Many ailments are now avoided, however, by the use of electric brooders of the battery and hover types.

The battery brooder is vertical, has several decks and works on the same principle as a heating pad, each deck having a heating element of between 150 and 200 watts. The decks are thermostatically controlled so that an even temperature is maintained. Day-old poults are placed in these brooders with about 75 to a deck and are kept

(Continued on page 16)



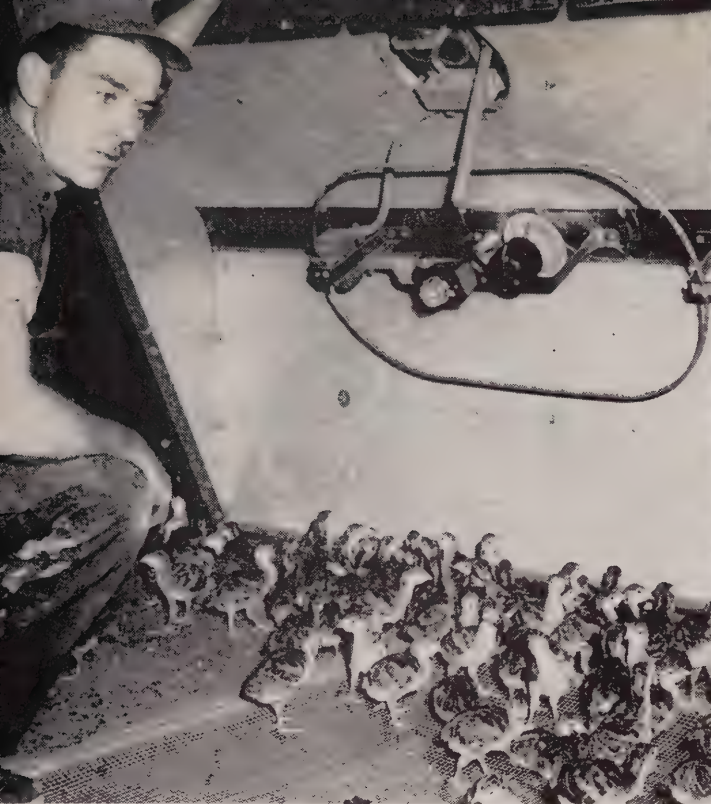
EACH OF these shiny, electric incubators (above) in service at the Vespra Turkey Farm near Barrie, has a capacity of 2,250 eggs. Commencing in February, the hatching of eggs is done twice a week and carried on for six months.



A TRAY of eggs is being placed in the incubator where they will remain for 25 days with temperature and humidity thermostatically controlled.



A TRAYFUL of "little bits" of wide-eyed, soft down (left) just hatched. Some of these babies will be sorted, weighed, put in cartons and shipped to various points throughout Canada. At this stage (right) they are what might be called "cute." In about twenty-eight weeks, however, they will be fully-grown turkeys, weighing anywhere from 15 to 25 pounds.



TWO TYPES of electric brooders, which help keep the poults warm, are shown above. On the left is a hover floor type showing some eight-day old baby turks. The right illustration shows a vertical battery brooder with several decks, each deck having a heating element of between 150 and 200 watts.



TURKEYS "ON the hoof"—just waiting for Thanksgiving! This fine flock of approximately 3,000 birds was photographed near Schomberg, Ontario.



AND NOW for the big moment when Dad carves slice after slice of white meat, enough for everyone, including the healthy appetites of the two visiting servicemen.

SAYING IT WITH TURKEY!

(Continued from page 13)

in the wire-floor enclosure for two weeks, and then put in brooder pens. After eight to ten weeks, if the weather is suitable, they are put on the range.

Some of the hover floor type brooders use an attraction light with exhaust fans and intake ducts so arranged that drafts are eliminated. Others use an ordinary electric bulb and reflector which provides an even heat.

Some farms use ultra-violet lights for the irradiation of poults at the beginning of the brooding season, and the "little ones" seem to derive a great deal of pleasure from the warm rays of the light.

If the little turks are to be shipped to some distant point, they are sorted and weighed immediately after



RATHER A large order for a little girl, but it isn't every day you get a chance at a big fat turkey leg and besides, Thanksgiving comes only once a year!

hatching, and put in cartons of four compartments accommodating 25 in each section, or 100 to a box.

It requires about twenty-eight weeks to mature turkeys before they are "ripe" for slaughtering, and during that time their diet is changed many times. At the start, like all infants, it is necessary that their formulae contain plenty of vitamins including cod liver oil, dried milk, wheat bran, pulverized oats, ground yellow corn, alfalfa leaf meal, meat scrap, fish meal and salt.

BOLT FROM THE BLUE



LIGHTNING AT times can be devastating in its effects. During a heavy thunderstorm on August 29, near Salford in the Ingersoll rural power district, a transformer was burned out, two switches were shattered, six lightning arresters were completely demolished, seven fuses were blown out and the pole above was split and riven—all by one bolt.

Only the male birds (toms, cockerels or gobblers) and a few females (hens) are used for market purposes.

Constant vigilance is necessary in every detail in the job of turkey raising, and sometimes this vigilance extends far into the night. For it is not uncommon to have the flock attacked by wolves, foxes or owls. For instance, the Vespra farm, Hydro News was informed, have lost as many as 32 turkeys in one night by wolves. The wolf's method of attack is to crush the turkey's ribs, and it is reported, he does not always "get the bird" because he happens to be hungry, but it seems to be his idea of an evening's fun. The family dog is of no help at these times because he will not turn on a wolf. Foxes are also dangerous enemies of turkeys, but here "Rover" can be counted on to do his "bit" in chasing them away.

Perhaps when you are sitting down to your Thanksgiving dinner and ask for an extra helping of white meat, you may give a thought to the planning, time and effort that has made that delicious turkey possible.

PLAN ANNUAL \$18,000,000 PROGRAMME FOR MAINTENANCE, NEW CONSTRUCTION

To Overtake Heavy Backlog Of Work Deferred During War Years—Projected Plans Outlined At District No. 3 O.M.E.A. Convention At Fort William

A programme, involving an annual expenditure of \$18,000,000 for some years to come, is being planned by the Commission and local utilities in Ontario, not only for important new construction but to overtake the heavy backlog of maintenance work which was deferred during the war years. Of that sum, it is estimated that the Commission will spend \$12,000,000 a year under this projected plan.

This announcement, contained in the address of Dr. Thomas H. Hogg, chairman of The Hydro-Electric Power Commission of Ontario, coupled with the prediction by Hon. Leslie M. Frost, provincial treasurer and minister of mines, that "Ontario is on the verge of immense metal mining developments," highlighted proceedings at District No. 3 convention of the O.M.E.A. at Fort William on September 6 and 7.

In the absence of Dr. Hogg, his address was read by Hon. George H. Challies, vice-chairman of the Commission, who also outlined interesting details of the Commission's five-year rural electrification plan when addressing the noon luncheon.

In his address, W. Ross Strike, H.E.P.C. commissioner and president of the O.M.E.A. discussed Hydro's plan to take care of the shortage of trained personnel by opening a school near Toronto for the training of linemen.

Of special interest to delegates in attendance was the reference in Dr. Hogg's address to the new 19,000-horse-

power unit which has been installed at the Alexander Landing plant. With the addition of this fourth unit, it was stated, the Thunder Bay system primary load now exceeds 140,000 horsepower.

Reading the chairman's address, Mr. Challies said that for some time to come the procurement of materials and equipment would be a major problem in planning and development, but just as soon as these essentials were available, work would proceed. Although many of the controls had been lifted, the problem of obtaining materials and equipment was still critical due to shortage of technical personnel and the enormous backlog of orders already placed with the manufacturers.

No Lack of Generating Sources

It was pointed out that in the Thunder Bay district there was no lack of available potential generating sources. The Ogoki diversion, which provided an additional average flow of 4,000 cubic feet per second for the Nipigon river added an additional 90,000 horsepower to the potential power of the Nipigon river. Proceeding, Mr. Challies said there were two undeveloped sites on the Nipigon river—one at Victoria Rapids where 60,000 horsepower could be developed, and the other at Pine Portage where 100,000 horsepower could be made available. Instead of developing these two sites, however, it was possible that one development would be undertaken by utilizing the total head of some 105 feet from the head water of the Cameron Falls plant to Nipigon lake, which would give an output of approximately 160,000 horsepower.

Immediate load growth at the head of the lakes was evident, he declared, in the overloading of the present



THIS GROUP of delegates at O.M.E.A. District No. 3 convention held at Fort William on September 6 and 7 comprises, left to right, front row, J. R. Pattison, chairman, Fort William Hydro-Electric Commission; A. G. Jennings, East York; T. C. James, H.E.P.C.; M. J. McDonald, chairman, Port Arthur Public Utilities Commission; back row, S. M. Smith, Port Arthur; G. J. Smith and J. D. Phillips, Schreiber.



WHILE DISTRICT No. 3 O.M.E.A. convention speakers provided food for the mind, the Royal Edward Hotel, Fort William, supplied food for the body in generous servings. The above illustrations indicate that the delegates really "set to" with a will for there was a lot "at steak!"

30,000 kv-a Bare Point terminal station at Port Arthur. However, plans had been completed for a new 15,000 kv-a transformer station at Port Arthur, to be erected at the centre of the load on the property of the Provincial Paper Company, and was expected to be placed in service by the fall of 1946.

Touching on the five-year rural project, the speaker stated that the Commission planned to build a total of 350 miles of rural lines in the five years to serve a total of 1,891 new consumers in the district. The new lines would consist of certain short extensions to existing lines and also longer lines in areas not now served.

He also declared that the townships and hamlets between Fort Frances and Rainy River, as well as the town of Rainy River, would be served in the near future.

Besides the shortage of materials, Mr. Challies said, the greatest bottleneck in rural line construction was the shortage of trained men. All told, there were over 1,200 men in the armed services and of these, 156 were linemen. However, with the men returning from overseas and the opening of a school near Toronto for training linemen, they hoped to solve the problem. It was expected that the new linemen's school would train fifty students every three months, or some 200 each year.

In line with the policy of the Commission and of the local utilities, maintenance work, not immediately essential, had been deferred during the war. As a result, extensive normal maintenance work had to be overtaken. The volume of this work, Mr. Challies explained, had increased because of extra depreciation resulting from continuous operation at high loads. To meet the cost of this work the H.E.P.C. and the local utilities had set aside reserves and had accumulated surpluses during the war.

"Few people realize the extent to which Hydro has grown," said Mr. Challies in conclusion. "It is now the third largest single corporation in Canada, exceeded only by the two railroad systems. Its assets are \$500,000,000, with a revenue of \$60,000,000 and it is still growing. I feel that this part of the province will probably be the leading light in the great future progress that is sure to come."

On Verge of Expansion

Hon. Leslie M. Frost, provincial treasurer and minister of mines, guest speaker at the evening banquet, said that the mining industry of Ontario was on the verge of the greatest development and expansion in its history. "Fresh discoveries," he continued, "have revealed promising conditions in new areas and in producing camps in areas which have been prospected, more or less perfunctorily, in the past."

Mr. Frost pointed out that there was the assurance that new mines would be adding to the wealth of the province as soon as men and supplies were available. Recognizing the importance of the mines in the Thunder Bay and twin city district, the first resident geologist, Dr. Horewood, had been located in the twin cities to supervise the collection of geological data and to gain special knowledge of the mining possibilities there, the speaker stated.

It was the intention of the Mines Department, he said, to carry out a complete geological mapping of the Thunder Bay district so that it would be easier for prospectors to find and develop new mineral deposits. As soon as the Government could secure the services of the highly skilled geologists and scientists required, they planned to put

(Continued on page 20)



W. ROSS STRIKE, (left) president of the O.M.E.A., and H.E.P.C. commissioner, and the Hon. George H. Challies (right) vice-chairman and commissioner of the H.E.P.C., photographed during their addresses at the evening banquet. It may be gathered from these pictures that it was a "hot" session.



HEAD TABLE guests included, left to right, R. Grenville Walsh, Port Arthur; Osborne Mitchell, secretary of the H.E.P.C.; T. C. James, system engineer, H.E.P.C.; Garfield Anderson, mayor of Fort William. On the right is Hon. Leslie M. Frost, provincial treasurer and minister of mines, one of the guest speakers, in action.

approximately twenty parties in the field each year in order to map the areas in detail.

Ontario's mines, he declared, had produced minerals worth over four billion dollars in the last fifty years, and he believed that this was only the beginning.

In conclusion, Mr. Frost said that he hoped some day, in the not too distant future, the twin cities would be noted for their steel industries, and that the light of blast furnaces would welcome travellers coming up the lakes.

Rural Electrification Programme

A five-year programme of rural electrification by the Government and the H.E.P.C., which was considered to be one of the most ambitious and progressive projects ever undertaken in Ontario, was outlined by the Hon. George H. Challies, vice-chairman and commissioner of The Hydro-Electric Power Commission of Ontario at the noon luncheon of the fifth annual convention of District No. 3.

The plan, he declared, had been designed to make Hydro power more accessible to the rural population, for both domestic and agricultural purposes, on a practical and economical basis. This involved the construction of more than 7,000 additional miles of rural primary lines in order to place Hydro service at the disposal of 58,000 new rural consumers. Of this number, 32,000 consumers would be farmers, he said.

To Average Million a Month

Mr. Challies pointed out that the plan called for a combined total outlay by the Government, the Hydro Commission and the rural consumers of more than 60 million dollars or an average of one million dollars a month over the five-year period.

In addition to this, it was estimated that the rural consumers themselves, both new and existing, would spend close to 40 million dollars on wiring their homes and farms and in the purchase of necessary electrical appliances and farm equipment.

The total work involved in the five-year period was estimated at 5,000 men for each year, the majority of whom would be employed in the manufacture and installation of materials and appliances.

Mr. Challies said in conclusion that when materials and labour were readily available to put the plan into operation, it would undoubtedly lead to better conditions for the Ontario farmer and, therefore, benefit the province and Canada as a whole.

Time To Keep Faith

W. Ross Strike, president of the Ontario Municipal Electric Association, and commissioner of the H.E.P.C., said at the noon luncheon, the time of "apres la guerre est fini" had arrived and that now the local authorities had to keep faith with the men who had served. Nearly every municipality had been extending its services and carrying on with the same personnel, or in some cases, decreased personnel.

The work of the Hydro lineman was very dangerous, he declared, and pointed out that a survey showed the average age of linemen at present was from 52 to 55 years. In order to obtain additional trained men, a linemen's school had been inaugurated near Toronto by the Provincial Commission. This school, he said, would begin with a personnel

of 50, mostly employees, and from that 50, it was hoped to obtain a number of instructors so that, if necessary, the school could be extended. During the three months' course, the students, who would later be taken from the municipalities, would have sleeping and dining accommodation, similar to other schools and colleges.

Mr. Strike further pointed out that in some instances the local personnel were on 24-hour duty, sometimes seven days a week, being subject to recall in emergency cases. It is hoped, he said, that with the procurement of an adequate number of trained men, this condition may be remedied.

The O.M.E.A. president stressed the importance of co-operation between the local commissioners and managers, and between the O.M.E.A. and the Hydro Commission.

"We must be prepared to make sacrifices," he said, "so that the lot of some other person may be just a little better. We can build a better world if we all do our share."

Visit Commission Plants

At the noon luncheon at the Royal Edward Hotel, Fort William, on the first day of the convention M. J. McDonald, chairman of the Port Arthur Public Utilities Commission presided and the convention dinner was under the chairmanship of J. R. Pattison, vice-president of O.M.E.A. District No. 3, and chairman of the Fort William Hydro-Electric Commission.

The second day of the annual meeting included a bus trip to Cameron Falls and Alexander Landing, where the delegates had an opportunity of inspecting the fourth unit at the Alexander development. This unit, which is now in operation, has a capacity of 19,000 horsepower. While at the plant, a typical construction camp dinner was served in the cafeteria. Following the inspection of the power plants the party returned to an informal closing dinner at Fort William.

WINDSOR PRE-SELLS

(Continued from page 11)

the used ranges we are able to acquire and all new hot-plates we can obtain enables us to barely meet our pledge that no one in Windsor shall lack electrical cooking equipment. In the case of washers we cannot do this, but we are led to believe that deliveries will soon be increasing and, therefore, since demand is lower, we shall not accumulate too great a backlog of orders.

This pre-selling plan has the merit of satisfying the public's preference for the "electrical way of doing things" by offering a tangible guarantee of orderly delivery as civilian production is stepped up. Not to undertake this plan, leaves the way open for a customer to discard his preference for an electrical appliance in favour of earlier delivery on an appliance operated from a competitive source.

We have made no extravagant promises on delivery dates. Each customer is fully apprised of the fact that delays may be long. Our only guarantee is orderly and fair delivery of the appliance of the customer's choice.

Results have been surprising and Windsor Hydro anticipates no difficulty in the disposal of its total appliance quota for some time to come.



Hydro HOME FORUM

by *Edithemma Muir*
HOME ECONOMIST

IT is with grateful hearts that Canadians sit down to their Thanksgiving dinner this year. The war is over and families are gradually being united after the lonely years. They will sit down to a dinner that will have simplicity as its keynote; and friendliness and a real spirit of thanksgiving will turn it into a very special occasion.

From all reports, spontaneous get-togethers at meal times are growing in popularity. We sometimes wonder how folks figure the budget and stretch the rations. But we've been told that one current plan is to have the hostess arrange the menu and furnish, say, the vegetables and relishes. Then each guest can bring another part of the meal, the entree, dessert, perhaps extra china, and so on.

A nicely-set table will help to lend a festive air—the best linen cloth, shining dishes and polished silver and glass. And even the simplest meal when well-cooked and tastefully served is something to be thankful for indeed! Here is a typical Thanksgiving dinner menu: apple juice, roast fowl, celery-onion stuffing, rich gravy, cranberry sauce, relishes, fluffy mashed potatoes, honeyed squash pieces, fruit tarts with cream whip and coffee.

DIRECTIONS

Roast Turkey with sage dressing:

(1) Select a 12 lb. turkey for 6 to 8 people.

(2) Singe bird after it has been drawn by holding over lighted candle to burn off the hair.

(3) Take off the feet carefully—

cut through the skin below joint in the leg. Place the leg with this cut on the edge of the table and break bone by pressing downward. Pull off the foot and with it the tendons.

(4) Pull back skin of neck and cut neck off close to the body, leaving enough of the skin to fold over back of bird.

(5) Remove oil bag over the back of tail.

(6) Clean inside thoroughly, wash off outside and dry.

(7) Mix 4 qts. bread crumbs, 2 tbsps. salt, 2 tbsps. sage, 7 tbsps. chopped parsley, $\frac{3}{4}$ cup minced onion and $\frac{3}{4}$ cup melted baking fat.

(8) Fill neck opening with sufficient stuffing to make the bird look plump; put remaining stuffing into bird but do not pack it too tightly. Allowance must be made for swelling.

(9) Pull neck skin down onto back; fasten with tooth picks or skewers.

(10) Fold wings back, slipping the tips under the main part of the wing against the back so they lie flat and close to the body.

(11) Close opening by placing skewers across opening at intervals; bring edges together by lacing cord back and forth around skewers just as you would lace a shoe.

(12) Rub the bird with grease.

(13) Place bird on one side of breast, in roast pan. Roast in preheated electric oven of 325 degs. allowing 20 mins. per pound. When bird is half-roasted, turn, baste and sprinkle with salt; cover.

Rich brown giblet gravy: place heart, gizzard, liver and neck in a saucepan,

cover with water, add salt and stew gently 2 hours or until tender. Cut meat from neck and chop it fine with giblets. Melt 2 tablespoons baking fat in a skillet; stir in 2 tablespoons flour, then add 2 cups of the giblet stock. (The flour should brown first or the mixture will turn grey). Season to taste and bring to a boil. Put in the chopped giblets and remaining liquid.

Cranberry sauce: Pick over 1 quart cranberries and wash. Add $\frac{1}{4}$ cup hot water, cover and simmer for 15 mins. Add 2 cups sugar and cook 5 mins. longer.

Relish tray: Match-like strips of yellow turnips, chilled. Sliced cucumbers dipped in spiced beet juice. Green tomatoes sautéed in baking fat. Cooked radishes in chutney sauce.

Georgian sweet potatoes: Cook 2 lbs. sweet potatoes for 30 mins. Drain, peel and mash; add 4 tbsps. baking fat, 4 tbsps. molasses, salt and hot milk to beat smooth. Put in a casserole and heat in hot electric oven for 10 mins.

Baked squash: Halve and clean pepper squash; turn cup-side down in a pan with half an inch of water. Bake in electric oven at 350 degs. 35 mins. Lift pan out, turn up the squash, sprinkle with salt, drizzle in a small amount of honey and return to oven to bake 15 mins.

Pink cream whip: Soak a package of gelatine with $\frac{1}{4}$ cup cold water. Heat 2 cups of strawberry juice and stir into gelatine. Chill until partially set, then stir in 1 cup light cream and chill again for $\frac{1}{2}$ hr. Beat thoroughly and store in the electric refrigerator as a stand-in for whipped cream on tarts.

RUINED GERMANY A PATCHWORK QUILT OF STRANGELY ASSORTED PATTERNS

Older People Are Resigned And Passive But Stalwart Lassies In Stolen Silks Still Carry Nazi Daggers In Their Handbags

“**O**VER here it is Sunday,” writes Sergeant Edward P. Pritlove, a former Hydro employee, to friends in the Ontario Hydro-Electric Club. “I’m on duty all day and have nothing to do. So after due consideration, I figure the easiest way to annoy the largest number of people is to spend the afternoon writing you a letter.”

Many of Hydro News readers will wish that Sergeant Pritlove had spent not only the afternoon but most of the evening, too, writing. After thanking the club for filling so many of his wants during six years of war in the way of chocolate, tobacco, magazines and otherwise hard-to-come-by commodities, the sergeant takes a deep dig in printer’s ink. And here’s the story.

“By the address you will ascertain that I am in a place called Lemgo. It is a small town, nestling among the hills of Westphalia, about half way, and a bit to the south, between Munster and Hanover, both cities of which exist in name and ruins only. This little town was the first in this province to adopt Nazism and had a very strong Hitler Youth movement. It was also the first town in the late middle ages to have the guilds amalgamate into trade unions. AND, it is also one of the few places that haven’t been partly or wholly destroyed. It gave up to U.S. Forces without a shot being fired; so instead of destroying it, they showed their appreciation by only taking everything they could lay their hands on. Result—a poor field for us Canadians to go souvenir hunting.

The inhabitants, although passive, don’t beam with pleasure as we pass them on the streets. The females of the species usually look the other way or stare stonily back at one. The men look rather sour, or scowl. So we don’t consider the place as exactly an Eden. We are compelled to leave camp in pairs and always carry loaded weapons, and the C.W.A.C. must have a male escort (sometimes to the disgust of both parties). The older people aren’t quite so bad as sometimes they will say a “Gute Nacht” in passing or remain pleasantly aloof.

The trouble, if any comes, will be from the teen-agers. They resent us very much. The boys seem to think the ending of the war cheated them out of their rights to be able to knock we “lesser” breeds around. The girls aren’t much better than the boys, tho’ there are a few, I notice, who are now taking the spirit of fraternization in a more social manner along with the chocolate bars and cigarettes that usually accompany a Canadian soldier when on pleasure bent.

Despite patriotism, there are always a certain few who don’t seem to be happy unless they can enjoy female com-



Sgt. E. P. Pritlove

(From a Canadian echelon headquarters in the heart of Germany comes a letter that is different. Sergeant Pritlove's narrative may have no great pretence to style, but it is like a string of cameos, each one flashing a reflection of the scene his observant eye took in as he passed from place to place. Most of the experiences he relates are his own. A few are those of friends with whom he was closely associated. But all are a-glitter with life and colour. Here is what the newsmen call a human interest story.—THE EDITOR.)

panionship despite nationality. One can understand the feelings of the younger German generation, of course, in a place like Lemgo, because not having suffered the results of defeat in smashed homes and allied military control, they are still imbued with the spirit of Nazi tenets and teachings.

German Waitresses In Silk!

The women here are mostly well-dressed. Silk stockings seem to be plentiful enough to be worn on all occasions. The stores are empty, though there are a few things of personal wear displayed in windows but always with a sign, “not for sale.” The luxuries are noticeable by their absence except such things as the people can make themselves out of wood and paintings. While none of the inhabitants is starving, or I’d say even hungry, there is nothing much they can buy, and that goes for us also. Money isn’t much use to us here as it can’t be spent except on a glass of beer which tastes like rainwater and costs 30 pfennings a glass (about 4c). Our sergeants’ mess uses civilian labour to serve our meals and we have 12 girls waiting on us. They wear a different dress each day and lovely lace-trimmed, sometimes shot-silk, aprons. Likely loot from other countries.

Bronzed Amazons

One must give the younger Germans credit for being in splendid physical condition. The young men and girls are bronzed from outdoor life and hard as nails. They have wonderful physiques. The girls seldom use cosmetics—even powder is seldom seen—but not because they don’t possess them. It has been noticed that practically all the girls carry a compact plus a small dagger in their handbags. They do their hair up in the latest Continental style, that is the up-sweep fashion, and it really suits most of them. The boys usually wear knee-length pants and open neck shirts, though there is an increasing number of sabots being worn by them, I notice. The Youth Movement has done wonders for their bodies, even if it twisted their mental processes.

There is a small German military hospital here, under Allied military control, and it is surprising to see the many young lads, some can’t be over 15 or 16 with arms, legs, fingers missing, and other injuries of a permanent nature. They claim they were on the Russian Front, but that can be taken with a grain of salt.

Lemgo is situated at the head of a long wide valley,

with high wooded hills in every direction. The wind, sweeping down from the North Sea, carries continuous clouds and when they hit these hills they just double up and we get it. It rains at least five days a week with more or less intensity, seldom gets unpleasantly hot and is always very cool at nights. Yesterday was a real cold day but it has turned nice today. Respect for Sunday, I suppose.

"So—Here We Are"

Why we are here is a mystery, like our landing in Antwerp last October ahead of the Infantry with only a line of tanks between us and the Germans who were still fighting in the town's outskirts. There are no other Canadian forces in this area and we are no nearer to them than we were back in Alost, Belgium. Still as Tennyson said, it's "not ours to reason why". So here we are.

Bare Walls Stick Up Like Bad Teeth

On our journey here from Belgium last June it was a real eye-opener to see the immense amount of damage done to the German countryside and towns. One reads of it but it must be seen to be really appreciated. Town after town has been absolutely ruined. Every farm house has a shell pumped into it for good measure, to prevent snipers or guerrillas using them in our rear. Towns like Wessel, Cleve, just don't exist any more. A few bare walls, sticking up like bad teeth, is all that remains of them. Take Munster, a city nearly as large as Hamilton, there aren't a dozen habitable houses left in it. The destruction is so

colossal as to be indescribable. Entire western Germany is in ruins, and, without doubt, the Russians did the same to the Eastern side. Germany really took it on the nose this time. The railways took an awful beating. All along the tracks are overturned coaches, freight cars and engines. Travelling is very slow and very rugged. I left here for U.K. leave at 2 p.m. on a Monday and got to Aberdeen at noon on the Thursday, travelling nearly all the time.

An Uncomfortable Journey

I had to go to Osnabruck by truck. Osnabruck, a fair sized city, is so badly ruined we had to go around the outside, it being impossible to use the streets. There was a British Transit camp here, and I spent most of the night at it. I got six hours sleep, which was the only sleep I got on the trip. I left there next morning and was 23 hours on the train before I reached Calais. The trains only run about 20 miles per hour as the roadbeds aren't safe for high speed. The trains, themselves, are a marvel of discomfort. The seats are plain wood with almost straight up-and-down backs. Dusty, dirty and ill-smelling, with wheels that shriek like the proverbial lost souls. On we went for mile after mile, hour after hour, unable to get comfortable—no water on the train and no food. You get a lunch handed to you on entraining and this consists of two sandwiches, a sausage of uncertain origin, a roll and a cookie. The bread in the sandwich is hard and dry and the contents usually bully beef.

At Calais one gets back to civilization again. The town has been badly mauled and part of it is in ruins,



TAKEN BY an R.A.F. official photographer, this picture shows bomb-shattered Cleve which was subjected to a devastating R.A.F. attack on February 7 and 8 of this year. It was one of the German cities visited by Sergeant Pritlove, the writer of the accompanying letter.

especially the dock area. Among these ruins the British have built their leave transit camp. It is a fairly large place and there pass through daily from 3,000 to 5,000 men going to U.K. on leave and the same number coming back. The Canadians have a section of their own. Here they gave us a breakfast and a lunch and put us on the boat for Dover which we reached one and a half hours later. Arriving there, we were marched off the boat, our passes signed with return date and then we were put straight on our trains with another similar lunch to that described. Leave personnel are told on the boat which group they are in, according to their destination. My lot, for Aberdeen and surrounding points were put on the Edinburgh train but it was found there were too many for Edinburgh district so we had to get out and take the Glasgow train.

Leaving Dover at 4 p.m. we ran straight through to Glasgow and got there at 6 next morning. Then an hour's wait and a train back across to Aberdeen. A journey like this isn't worth the leave. Jammed into the coaches, the way we were with our luggage, there wasn't room to get comfortable and though the English trains have cushioned seats, we were so tired that they didn't seem to help matters any. On the way back, the trip was worse from Calais, as we had to go to Antwerp and take the northern trip. We had to use blitzed German coaches and most of the windows had been broken so the wind, smoke and dust blew in one's face nearly all the time. Also in some coaches there were no seats left, just the frames, so those unfortunates who drew these had to dispose their kit bags, as best they could for seats.

Of course this state of affairs is gradually improving as they get rail lines repaired. The trains will be able to go faster, though it is doubtful if the state of the coaches will improve for some years to come. When the local people travel, which isn't very often, they have to use box cars, if there is room in them for them.

Germans On The Move—And How!

All over Germany today are thousands of people hitch-hiking to where their homes used to be. One meets them on the road continually, pushing their small carts, with a couple of small children sitting on top or helping to push if they are big enough. Sometimes several women with immense loads on their backs and a baby buggy full of odds and ends can be seen. Others are pushing bicycles and loads of bedding strapped on to them. In fact, anything that will transport their few remaining effects is pressed into service. Practically all German civilian trucks have about 20 to 30 people perched on top of their loads, getting a lift along the roads. Military vehicles, of course, aren't permitted to carry civilians. One sees hundreds of released German soldiers walking to their homes. They are released from the prison camps and have to get on as best they can. Most towns have a garage or old shed where these soldiers stop for a bit of rest. Then the locals gather around and try to learn something of their own men folk. Yes, the Jerry is really getting a taste of what he made others go through, this time.

Belgian Hospitality

In Belgium it was vastly different. The people there couldn't do enough for us. They went out of their way to be friendly and when we were billeted on them, they

immediately made us part of their family with precedence as a guest. They didn't have much food unless they could afford to buy it on the black market, but what they had we got first crack at it. If you came in and took your shoes off, they disappeared immediately to return a few minutes later shining like their kitchen stove. If you didn't have any slippers they got you some. You weren't allowed to do any of your mending and if you wanted them to do your laundry they would be tickled silly if you gave them some soap. That was one of their wants, soap. Their issue was a small cake about half the size of the average cake of toilet soap and a dirty brown in colour. It didn't give off any suds but a greasy kind of lather and one such bar was their ration per person per month. That included laundry also. Once, I didn't like the way a certain store did my dress shirt so next time I cut a bar of laundry soap in half and gave it to the lady and told her I wanted my shirt washed decently. From then on I got my shirts done for nothing and done up right.

Landlady And Guest

A rather comical instance will give proof of their way of looking after us. One of our Sergeants decided he'd worn his uniform long enough and decided to turn it in and draw a new one. Clothes must be worn out before they can be turned in, so he got a piece of sandpaper and a block of wood and spent over an hour one evening, sanding out the elbows, cuffs, knees and seat of his pants. He then threw them on a chair and went out for the rest of the evening. When he came back he found his uniform all nicely darned up and pressed and quite ready to wear again. His landlady thought she was doing him a good turn and had spent the whole evening repairing it for him. He nearly had a fit and wasn't the least appreciative of her good intentions and industry.

Another chap got a bad cold so his landlady gave him a sleeping pill after numerous shots of good cognac and hot toddies. Next morning the poor devil slept through and as he didn't turn up all morning he was marked Absent Without Leave. He didn't come in after dinner either as she'd given him more dope and he was afraid he wouldn't make the office. An escort was sent up to see what had become of him and the old girl was quite indignant that the military should interfere with "her Charlie" when they told him to report to the M.O. immediately.

No Alarm Clocks For Heroes

Several times, chaps were late for work because their landlady wouldn't wake them in the morning because she knew they had been out late the night before. She said they needed the rest. We were all very sorry to have to leave Belgium. Most of us return there when we get a spot of leave, as I shall myself if I get any more. My other leave was the first break for 17 months. Since V-Day we have worked harder than at any time, excepting the preparations for D-Day. One of the jobs of the H.Q. is to get things ready for the boys to return home and that has been a big job. For 6 weeks after V-Day we worked every day till 9 at night, Sunday included, and only these last few weeks have we been able to get Sundays as a free day. We stopped the night work when coming here as there are no lights in the garages we use for offices. We occupy a German Officers' Training School. Well, I've rambled on long enough." (Hydro News wonders).

#his and #hat

By The Editor

HYDRO lines which thread through hundreds of miles of bush in Ontario's great North Country are life lines to the modern pioneers whose skill, enterprise, ambition and strength are gradually uncovering some of the rich natural resources of this amazing, vast and remote hinterland. This land of forest, stream and river is a happy hunting ground, not only for the tourist, hunter and fisherman, but for the trapper, prospector and miner, and for the brawny, keen-eyed men whose equally keen axes send great trees crashing to the ground.

* * *

These are but a few of the many vivid impressions which pass in a colourful panorama through our mind as we return to our desk following a visit to the North where our fast-moving itinerary included short stops at the Commission colonies at Ear Falls, Rat Rapids and Cameron Falls, and at patrolmen's cottages along the 150 miles of Uchi line and at key points in the Red Lake mining area where we saw at first hand the mighty important job which Hydro is doing.

* * *

We came back with a book full of notes, several packs of exposed film and with the realization that Commission employees at these distant outposts of Hydro are doing a job which is vitally linked with the economic and industrial development of this province.

In forthcoming issues of Hydro News, we will endeavour to portray for our readers, in story and pictorially, our most vivid impressions

of life and living conditions, and of the big job Hydro is doing in that northern El Dorado.

Our first story will feature the Ear Falls colony, which is 60 miles northwest of Hudson, and the Hydro folk who make up this little community. At this time, we remember the spontaneous warmth of their welcome . . . the short, sturdy, fast-moving and efficient superintendent of the Patricia District, William (Bill) Dowds whose eyes seem to twinkle all the while and whose features might be described as "cherubic" when he smiles. . . . We remember the happy Krulls and MacDonalds and the cheery Nymarks Dufaults, Weavers, Wardrops, Moesers and others. . . . Then there was that charming and very efficient school teacher, Bessie Gardiner, better known as "Bobby," who is doing such a fine job in the local school.

* * *

We also remember the many sincere and enthusiastic tributes paid to Hydro by such men as A. G. (Alex) Hattie, mining director of the Hammell mining interests and manager of the Pickle Crow mine, who said: "We just couldn't get along without Hydro." . . . We cannot forget Mr. Hattie's strong handclasp, his happy smile and the delightful way in which he says "Okay, okay." . . . Many others who re-echoed Mr. Hattie's sentiments about Hydro included J. L. Ramsell, manager of McKenzie Red Lake; Alfred E. Pugsley, manager of Hasaga; W. P. Mackle, manager of Couchenour-Willans; A. G. Crayston, manager of Madsen; and R. E. Barrett, manager of Central Patricia. . . . We recall, too, our sensations as we made our first descent into the dark depths of a gold mine for the first time and many other experiences

which we will record in future issues of Hydro News

A bear which showed up at the Coniston plant near Sudbury enlivened the few days of her vacation which Mabel I. ("Brownie") Evans of the Commission staff spent with her friends P. R. McAdam, assistant superintendent of the Sudbury-Nipissing District, and his wife, the former Hazel Kane, who was at one time identified with the mailing department. Ideas about electrically-cooked food may have attracted the animal to the vicinity of Hydro's 63,000 horsepower development where he was spotted making an inspection of the garbage cans in the early morning hours. The very thought of his presence, however, was unbearable especially to the ladies! And so a guard was mounted, guns were manned and, later that day, the quarry was sighted and hit but scampers into the woods. Next day was proclaimed B-Day and a party including Mr. and Mrs. McAdam and Miss Evans set out on the bear's trail. As yet, none has shown up with a bear-skin rug!

SOME BEAR FACTS

* * *

Speaking about bears, a newspaper story claims that the Niagara Falls, Ont., district, "just recovering from a serious siege by wolves has now another problem—a big, black bear." A bus-load of Hydro workers proceeding to the Queenston plant, it states, had a close-up view of the animal. It was a good story but for one fact; the "bear" proved to be a Newfoundland dog! And now we are beginning to wonder about the kind of wolves there are in that vicinity!

Lighter Lines



"Say, Clara, I wish you'd stop feeding every cat in the neighborhood!"

During a recent baseball game between Rochester and Toronto a white towel was waved when a ball landed in the Toronto dug-out. Apparently under the impression that their opponents had surrendered, the Rochester batteries refrained from further offensive action, and the home team went on to win by a score of 10 to 2.

The white towel they waved as a lark
Led an excited fan to remark

"We've give up—no we aint,

It was only a feint,
Pruett's slammed the ball out of the park."

* * *

With honey so scarce this year, philanderers will have to be careful about addressing blondes as "honey pie" and "honey bunch." In breach of promise suits, the courts will be apt to regard these expressions as terms of particular endearment.

* * *

There are rumors that Nylon stockings will be available again before long. Manufacturers, however, will scarcely be prepared to guarantee that there will be no runs on them.

It was the anniversary of Trafalgar Day, and the Seamen's Institute was crowded with old salts.

"And so," said the speaker of the evening, "all Europe lay prostrate at the feet of Napoleon. Even as the admiral set foot on the deck of the Victory, the greatest alarm and perturbation was felt throughout Nelson's England."

"Not Nelson's England, Nelson's Br-r-tain," objected a Scot in the front seats.

"Leave the mon alone, Jock," admonished a grizzled old engineer's mate at the back of the hall. "He kens his history a recht. There was nae alar-r-um felt in Nelson's Scotland at all."

* * *

With food so short our scientists should surely lend a hand;

Why not grow crops in water as well as on the land?

Those men who split the atom—
they're as clever as can be—

Why can't they grow tomatoes in the Saragossa sea?

* * *

The plaintiff in the motor accident case said he had incontrovertible evidence.

"Call your witnesses," ordered the court.

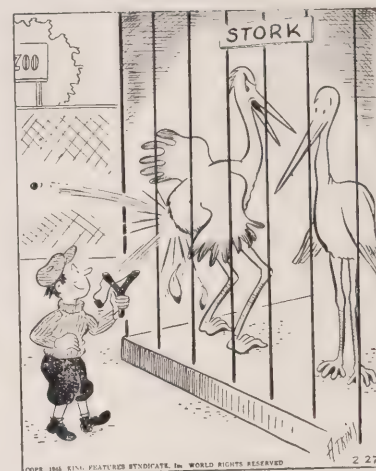
The plaintiff merely turned. On the back of his shirt was imprinted the license number of the car which had struck him.

* * *

DOWNWORDS PUZZLE

LAST MONTH'S SOLUTION

1	2	3	4	5	6	7	8	9	10	11	12
B	A	R	R	E	T	T	C	H	U	T	E
A	R	E	A	L	A	R	R	E	N	A	N
N	C	D	S	E	X	O	A	R	D	C	C
N	H	M	P	C	I	U	N	R	E	I	H
O	I	U	B	T	D	T	B	I	R	T	A
C	P	L	E	R	E	S	E	N	G	U	N
K	E	B	R	I	R	T	R	G	R	R	T
B	L	E	R	C	M	R	R	G	O	N	R
U	A	R	I	I	E	I	U	W	I	E	
R	C	K	E	T	S	A	E	L	I	T	S
N	O	Y	S	Y	T	M	S	L	H	Y	S



"If I had known how he was going to turn out, I'd dropped him in the Atlantic Ocean!"

* * *

A visitor to the Bronx zoo hurried to the place where they keep the giant Galapagos tortoises.

"I'd like to see these creatures fed," he told the keeper.

"Well," said the man, "they're fed on the other side of the house. I'm just starting them across now."

The visitor looked at his watch.

"That would be just my luck. I hoped you would be feeding them later. I have a lunch appointment in the restaurant at one o'clock."

"That's all right," the keeper assured him. "It takes these fellows about an hour to cross the floor."

* * *

The editor looked doubtfully up at the market reporter who had just handed in his copy.

"Do you mean to say Tom Brown sold 2,010 pigs this morning?"

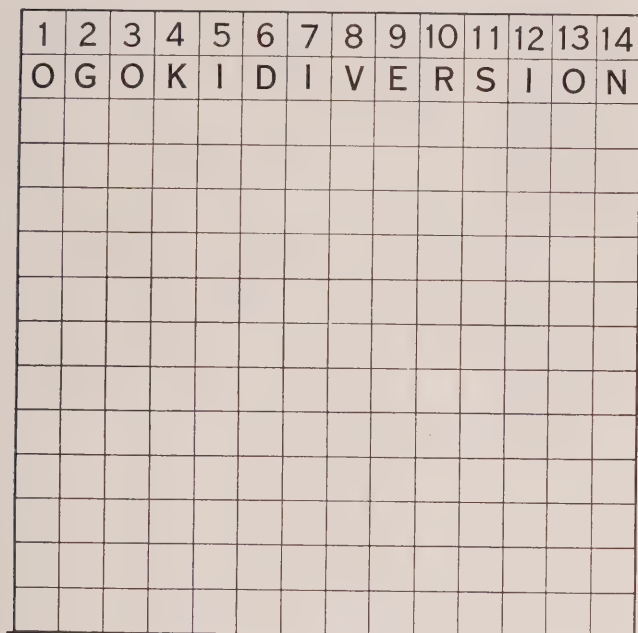
"That's correct."

"Who gave you the figures?"

"Brown, himself."

The editor got busy with the blue pencil.

"That accounts for it. I know that old guy. He lisp. What he told you was 2 sows and 10 pigs."



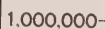
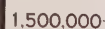
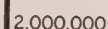
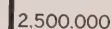
“WELL,” quoth Professor P. (for Peter) Perplexus, “most Downwords fans should be back from their holidays by now with their cerebra nicely cleaned and dusted, so I am giving them a little longer puzzle this month. It should not, however, present much difficulty. As the hunting season is close at hand we had better take the big shots up to the Ogoki diversion in the Nipigon country. They can take a look around at one of the Commission’s greatest undertakings while they are waiting for the government game wardens to give them the green light. Good hunting, everybody!”

1. Ladies wore them on their hats in the gay nineties.
2. Thomas Hardy's tree.
3. He's crazy about orchids.
4. River at the head of Great Lakes navigation. The big ships put in here for wheat.
5. N.G. for any kind of responsible job.
6. Residence of the British Prime Minister.
7. They come about the time of the rugby football season—when we get them.
8. Highest reward for valour.
9. Among the refreshments served at race tracks and baseball games.
10. You must rank high in both studies and sports to become this and go to Oxford.
11. An African killer of snakes.
12. League to which the Toronto baseball team belongs.
13. Student of birds and their ways.
14. Where teachers go to learn to teach.

EMBRACING NIAGARA, GEORGIAN BAY AND EASTERN ONTARIO
DIVISIONS

HORSEPOWER

1945
1944
1939



JAN. FEB. MAR. APR. MAY JUNE JULY AUG. SEPT. OCT. NOV. DEC.

AREA SERVED BY	MAXIMUM 20-MINUTE PEAK H P		PER CENT INCREASE
	AUGUST, 1945	AUGUST, 1944	
SOUTHERN ONTARIO SYSTEM . . .	1,973,193	1,894,338	+ 4.2
THUNDER BAY SYSTEM	117,694	110,188	+ 6.8
NORTHERN ONTARIO PROPERTIES	224,074	186,658	+ 20.0
TOTAL	2,314,961	2,191,184	+ 5.6

SOUTHERN ONTARIO SYSTEM . . .	2,090,351	1,980,296	+ 5.6
THUNDER BAY SYSTEM	130,027	119,973	+ 8.4
NORTHERN ONTARIO PROPERTIES	<u>267,814</u>	<u>241,886</u>	+ 10.7
TOTAL	2,488,192	2,342,155	+ 6.2

MUNICIPAL LOADS, JUNE, 1945

SOUTHERN ONTARIO SYSTEM

NIAGARA DIVISION (25-Cycle)

SOUTHERN ONTARIO SYSTEM			Popula- tion		Popula- tion			
NIAGARA DIVISION (25-Cycle)			H.P.		H.P.			
	H.P.	Popula- tion						
Acton	1,736	1,903	Erie Beach	40	21	Palmerston	654	1,400
Agincourt	225	P.V.	Essex	568	1,886	Paris	1,934	4,604
Ailsa Craig	158	487	Etobicoke	7,899	V.A.	Parkhill	261	1,029
Alvinston	110	649	Exeter	763	1,654	Petrolia	1,037	2,768
Amherstburg	1,073	2,704	Fergus	1,437	2,759	Plattsville	156	P.V.
Ancaster Twp.	414	V.A.	Fonthill	177	860	Point Edward	1,703	1,199
Arkona	69	403	Forest	612	1,562	Port Colborne	1,750	6,928
Aurora	1,469	2,821	Forest Hill	6,992	12,172	Port Credit	959	1,934
Aylmer	1,057	1,985	Galt	12,098	15,126	Port Dalhousie	1,123	1,599
Ayr	254	760	Georgetown	2,151	2,452	Port Dover	490	1,790
Baden	631	P.V.	Glencoe	214	763	Port Rowan	114	700
Beachville	857	P.V.	Goderich	1,791	4,674	Port Stanley	1,094	824
Beamsville	520	1,227	Granton	73	P.V.	Preston	4,301	6,656
Belle River	219	1,200	Grimsby	914	1,988	Princeton	157	P.V.
Blenheim	580	1,873	Guelph	11,998	23,074	Queenston	147	P.V.
Blyth	163	662	Hagersville	1,208	1,524	Richmond Hill	538	1,295
Bolton	240	629	Hamilton	162,486	164,719	Ridgetown	670	1,986
Bothwell	145	683	Harriston	508	1,292	Riverside	1,264	5,235
Brampton	3,202	6,157	Harrow	614	1,092	Rockwood	161	P.V.
Brantford	23,133	31,622	Hensall	183	686	Rodney	141	758
Brantford Twp.	1,355	V.A.	Hespeler	2,961	2,938	St. Catharines	30,046	34,541
Bridgeport	195	P.V.	Highgate	96	322	St. Clair Beach	128	138
Brigden	88	P.V.	Humberstone	538	2,831	St. George	199	P.V.
Brussels	151	784	Ingersoll	3,640	5,757	St. Jacobs	370	P.V.
Burford	290	P.V.	Jarvis	192	513	St. Marys	1,782	4,009
Burgessville	57	P.V.	Kingsville	600	2,453	St. Thomas	8,914	17,045
Burlington	1,683	3,925	Kitchener	29,652	35,465	Sarnia	6,764	18,599
Burlington Beach	499	1,474	Lambeth	111	P.V.	Scarborough Twp.	4,865	V.A.
Caledonia	401	1,430	LaSalle	293	907	Seaforth	1,107	1,782
Campbellville	58	P.V.	Leamington	1,850	6,048	Simcoe	2,840	6,304
Cayuga	139	700	Listowel	1,666	2,984	Smithville	191	P.V.
Chatham	7,828	17,184	London	45,018	81,567	Springfield	72	382
Chippawa	351	1,228	London Twp.	517	V.A.	Stamford Twp.	2,914	8,275
Clifford	108	491	Long Branch	1,341	4,258	Stoney Creek	237	933
Clinton	759	1,879	Lucan	208	643	Stouffville	388	1,198
Comber	141	P.V.	Lynden	112	P.V.	Stratford	7,874	17,163
Cottam	77	P.V.	Markham	430	1,175	Strathroy	1,652	2,834
Courtright	49	355	Merlin	99	P.V.	Streetsville	250	701
Dashwood	129	P.V.	Merritton	10,882	2,916	Sutton	400	949
Delaware	76	P.V.	Milton	1,632	1,915	Swansea	2,762	7,100
Delhi	478	2,430	Milverton	429	994	Tavistock	749	1,080
Dorchester	91	P.V.	Mimico	2,807	8,785	Tecumseh	419	2,391
Drayton	160	528	Mitchell	812	1,670	Thamesford	256	P.V.
Dresden	483	1,525	Moorefield	60	P.V.	Thamesville	217	816
Drumbo	127	P.V.	Mount Brydges	109	P.V.	Theford	119	598
Dublin	57	P.V.	Newbury	39	298	Thorndale	102	P.V.
Dundas	2,926	5,245	New Hamburg	707	1,441	Thorold	3,136	5,284
Dunnville	1,459	3,916	Newmarket	2,241	3,800	Tilbury	1,504	1,923
Dutton	241	830	New Toronto	10,916	9,469	Tillsonburg	1,547	4,602
East York Twp.	8,784	41,578	Niagara Falls	11,601	20,371	Toronto	359,958	657,612
Elmira	1,391	2,069	Niagara-on-the-Lake	11,627	1,764	Toronto Twp.	3,699	V.A.
Elora	518	1,185	North York Twp.	10,026	V.A.	Wallaceburg	5,007	4,802
Embro	149	420	Norwich	464	1,301	Wardsville	44	221
Erieau	223	218	Oil Springs	174	541	Waterdown	285	867
			Otterville	104	P.V.	Waterford	460	1,294
						Waterloo	6,402	8,968
						Watford	408	1,023

MUNICIPAL LOADS, JUNE, 1945

	H.P.	Popula- tion
Welland	13,095	14,899
Wellesley	148	P.V.
West Lorne	293	768
Weston	4,774	6,234
Wheatley	218	761
Windsor	54,713	118,040
Woodbridge	714	1,100
Woodstock	8,951	12,339
Wyoming	97	538
York Twp.	18,136	77,175
Zurich	150	P.V.
(66 $\frac{2}{3}$ -Cycle)		
Bronte	160	P.V.
Oakville	1,467	4,243
Trafalgar Twp.	596	V.A.

GEORGIAN BAY DIVISION (60-Cycle)

Alliston	473	1,700
Arthur	176	1,089
Bala	266	355
Barrie	4,642	9,599
Beaverton	316	941
Beeton	88	617
Bradford	325	1,041
Brechin	63	P.V.
Cannington	274	761
Chatsworth	82	333
Chesley	631	1,812
Coldwater	212	545
Collingwood	2,928	6,249
Cookstown	121	P.V.
Creemore	157	661
Dundalk	233	686
Durham	440	1,874
Elmvale	185	P.V.
Elmwood	69	P.V.
Flesherton	55	452
Grand Valley	198	645
Gravenhurst	1,288	2,261
Hanover	1,478	3,190
Holstein	21	P.V.
Huntsville	1,254	2,943
Kincardine	819	2,483
Kirkfield	26	P.V.
Lucknow	337	856
MacTier	136	V.A.
Markdale	181	776
Meaford	812	2,759
Midland	5,211	6,754
Mildmay	160	764
Mount Forest	564	1,936

	H.P.	Popula- tion
Neustadt	45	43
Orangeville	796	2,558
Owen Sound	6,514	13,559
Paisley	139	530
Penetanguishene	1,074	4,177
Port Carling	251	520
Port Elgin	587	1,415
Port MacNicoll	94	950
Port Perry	384	1,175
Priceville	10	P.V.
Ripley	127	420
Rosseau	34	305
Shelburne	265	1,053
Southampton	648	1,467
Stayner	339	1,106
Sunderland	94	P.V.
Tara	132	510
Teeswater	191	973
Thornton	27	P.V.
Tottenham	137	532
Uxbridge	405	1,480
Victoria Harbour	74	979
Walkerton	1,219	2,534
Waubushene	124	P.V.
Wiarton	349	1,750
Windsor	70	117
Wingham	845	2,149
Woodville	72	439

EASTERN ONTARIO DIVISION (60-Cycle)

Alexandria	257	1,976
Apple Hill	54	P.V.
Arnprior	1,426	4,019
Athens	155	626
Bath	46	325
Belleville	8,347	15,498
Bloomfield	131	636
Bowmanville	2,808	3,850
Brighton	456	1,462
Brockville	5,612	11,112
Cardinal	423	1,602
Carleton Place	2,039	4,143
Chesterville	305	1,094
Cobden	116	643
Cobourg	2,435	5,907
Colborne	234	960
Deseronto	270	1,002
Finch	103	396
Frankford	168	1,095
Hastings	161	823
Havelock	147	1,103
Iroquois	337	1,123

	H.P.	Popula- tion
Kemptville	393	1,230
Kingston	16,909	29,545
Lakefield	423	1,301
Lanark	91	686
Lancaster	51	570
Lindsay	4,101	8,345
Madoc	249	1,130
Marmora	150	1,004
Martintown	52	P.V.
Maxville	111	811
Millbrook	128	749
Morrisburg	372	1,484
Napanee	1,597	3,241
Newcastle	204	701
Norwood	169	710
Omeme	195	630
Orono	94	P.V.
Oshawa	17,817	26,610
Ottawa	38,204	150,816
Perth	1,975	4,187
Peterborough	14,985	24,977
Pictou	1,476	3,400
Port Hope	3,036	4,997
Prescott	1,766	3,318
Renfrew	182	5,673
Richmond	68	428
Russell	85	P.V.
Smiths Falls	3,356	7,741
Stirling	391	947
Tranton	5,588	8,183
Tweed	350	1,181
Warkworth	85	P.V.
Wellington	266	948
Westport	109	725
Whitby	1,557	4,236
Williamsburg	111	P.V.
Winchester	437	1,017

THUNDER BAY SYSTEM

	(60-Cycle)	
Fort William	14,849	30,370
Nipigon Twp.	232	V.A.
Port Arthur	25,512	24,217

NORTHERN ONTARIO PROPERTIES

Nipissing District (60-Cycle)		
North Bay	4,978	16,013
Patricia District (60-Cycle)		
Sioux Lookout	300	1,967
Sudbury District (60-Cycle)		
Capreol	288	1,660
Sudbury	9,600	36,724

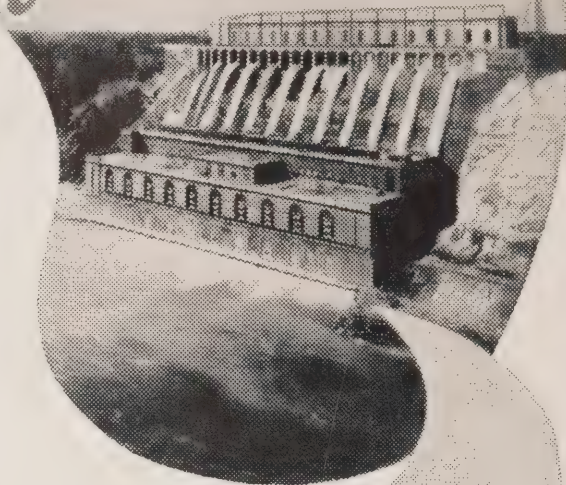
HYDRO provides fast, dependable

"Made to order" SERVICE

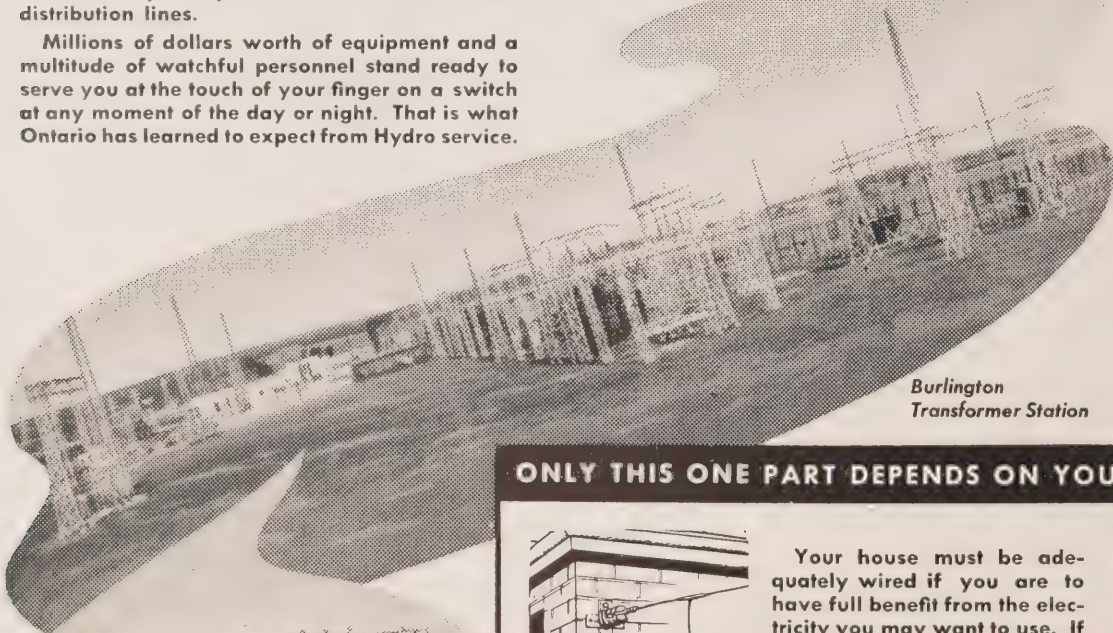
Do you realize that Hydro power must be made to your order . . . made and delivered to you so quickly that it would seem to be always there? Electricity cannot be stored. It must be made within a tiny fraction of a second of the time it is used. The flow of water to the generators is controlled by sensitive automatic gates, so as to make only enough for the demands of the moment.

Whenever you flip a switch, you use electricity before the water which made it can leave the power house. Your order is received and filled faster than a good camera can wink its eye. Yet the power comes to you through a giant transformer station, a local distribution station, a small transformer near your home . . . all connected by many miles of transmission and distribution lines.

Millions of dollars worth of equipment and a multitude of watchful personnel stand ready to serve you at the touch of your finger on a switch at any moment of the day or night. That is what Ontario has learned to expect from Hydro service.



Queenston-Chippawa
Generating Plant

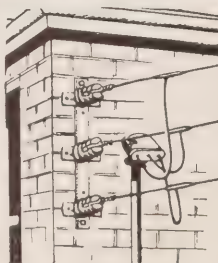


Burlington
Transformer Station



A Municipal Distribution Station

ONLY THIS ONE PART DEPENDS ON YOU



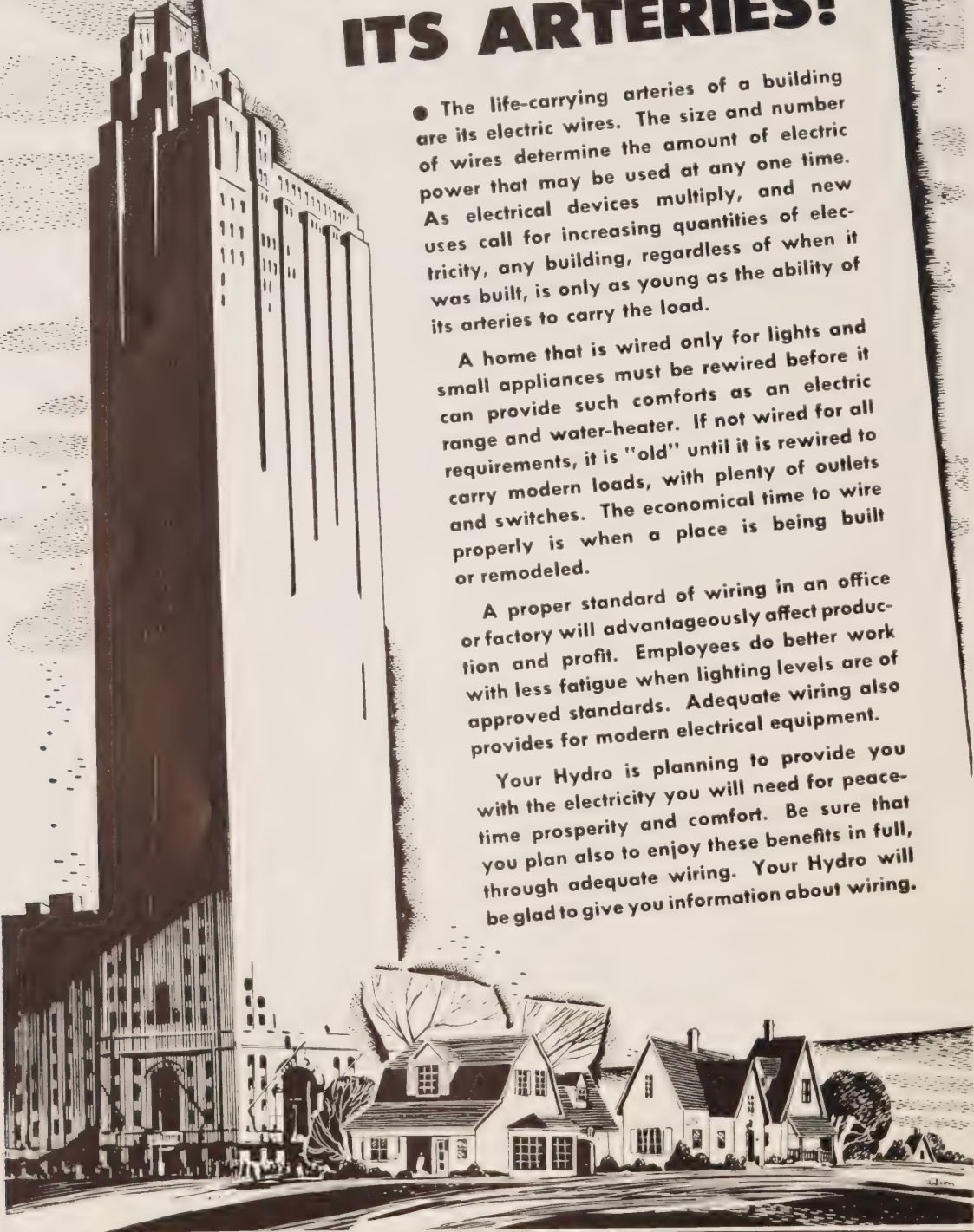
Your house must be adequately wired if you are to have full benefit from the electricity you may want to use. If your place is wired for a range and a water heater, you can assume that you have enough wiring from the small transformer to your house. From there, be sure that you have enough circuits and plenty of outlets conveniently placed in every room. Remember that any one outlet can supply only a limited amount of power efficiently and safely. Remember, too, that you will want an ever-growing number of electrical conveniences in the years to come. The economical time to wire adequately is when you are building or making major alterations. Plan now for your electrical future by wiring completely.

THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO



HYDRO! *News*

AT EAR FALLS

A black and white illustration. On the left, a tall, Art Deco-style skyscraper with many windows and a flat top. To its right, a row of four small, single-story houses with gabled roofs and multiple windows. The background is a simple sky with some clouds.

home or skyscraper **IT'S AS OLD AS ITS ARTERIES!**

● The life-carrying arteries of a building are its electric wires. The size and number of wires determine the amount of electric power that may be used at any one time. As electrical devices multiply, and new uses call for increasing quantities of electricity, any building, regardless of when it was built, is only as young as the ability of its arteries to carry the load.

A home that is wired only for lights and small appliances must be rewired before it can provide such comforts as an electric range and water-heater. If not wired for all requirements, it is "old" until it is rewired to carry modern loads, with plenty of outlets and switches. The economical time to wire properly is when a place is being built or remodeled.

A proper standard of wiring in an office or factory will advantageously affect production and profit. Employees do better work with less fatigue when lighting levels are of approved standards. Adequate wiring also provides for modern electrical equipment.

Your Hydro is planning to provide you with the electricity you will need for peacetime prosperity and comfort. Be sure that you plan also to enjoy these benefits in full, through adequate wiring. Your Hydro will be glad to give you information about wiring.

THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO



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THE FRONT COVER



THIS month's front cover illustration entitled "At Ear Falls" captures something of the rugged beauty of the North Country where Hydro is doing an all-important job in supplying power to gold mines, paper mills and other industries. The picture is one in a series taken by J. H. Mackay of the Commission staff.

Volume 32

November, 1945

Number 11

CONTENTS

	Page
Alexander Landing - - - - -	2
Page Three - - - - -	3
Marching Along! - - - - -	4
Meet In Hamilton - - - - -	8
Districts 7 And 8 At Sarnia - - - - -	9
Present Awards At Galt - - - - -	12
Eastern Ontario Electric Association - - - - -	13
Come Into The Garden - - - - -	19
A.M.E.U. Meeting At London - - - - -	21
District No. 6 O.M.E.A. - - - - -	24
Lighter Lines - - - - -	28
This And That - - - - -	29
Hydro Home Forum - - - - -	30
Downwards Puzzle - - - - -	31
Monthly Load Summary - - - - -	31
Municipal Loads - - - - -	32





THOSE WHO have seen the various Commission plants agree that the Alexander Landing development on the Nipigon river is located in one of the most picturesque settings to be found anywhere in Ontario. The beauty of this area and an interesting impression of the plant have been captured in this arresting

A NOTEWORTHY RECORD

LONG and faithful service with a good, sound firm or organization usually brings its own peculiar reward. Who has not detected an inward contentment and pride as he has listened to an old and valued employee tally the record of his working years? "Yes, I have been with the John Brown Company from away back in —" is a statement that invites thought and reflection especially in such restless times as these.

The idea held by many that it is a good thing to keep shifting about, and the cynical view that a man has only remained in one place because he has got into a rut or has lacked the initiative to get out and find a better job for himself is, in most cases, unsupported by evidence. There are, of course, times and circumstances when a man can and should make a move to his own advantage; but the pulling up of the roots without forethought or reflection is often followed by unfavourable results both for the man himself and the general economy upon which security of employment is based.

As the years pass by, a good man becomes part and parcel of the organization with which he is associated. Its achievements, and if it is a worthy firm, its honour, become his own. Promotion as opportunities occur, will naturally accompany continued loyalty and application to work, and will be contingent only upon business conditions and the ability of a man to handle higher-up jobs.

Clubs and associations of employees with long records of service are coming more and more to be regarded as a stabilizing influence in business and industry and as important links in the understanding and co-operation that is becoming increasingly necessary between management and employees.

In Hydro there is the Quarter Century Club, which held its annual banquet at the King Edward Hotel in Toronto on October 19. The membership of this club is made up of 722 Hydro and former Hydro employees who have had twenty-five or more years' service with the Commission.

As this club includes men, and quite a few ladies, too, from all departments of the Commission's system throughout Ontario, its influence in promoting good-will and understanding can scarcely be over-estimated. At the same time, it preserves an air of friendly ex-

clusiveness, supported by not a few privileges, which should have a stimulating effect on those entering the Commission's service. "You've got to stay with it, if you want to get to us", might perhaps be considered as its slogan. And, by and large, that is, perhaps, as it should be.

* * * * *

ANOTHER FORWARD STEP

WITH the inauguration of a school for the training of linemen, The Hydro-Electric Power Commission of Ontario, in co-operation with Hydro municipalities, is taking another forward step in serving the people of Ontario.

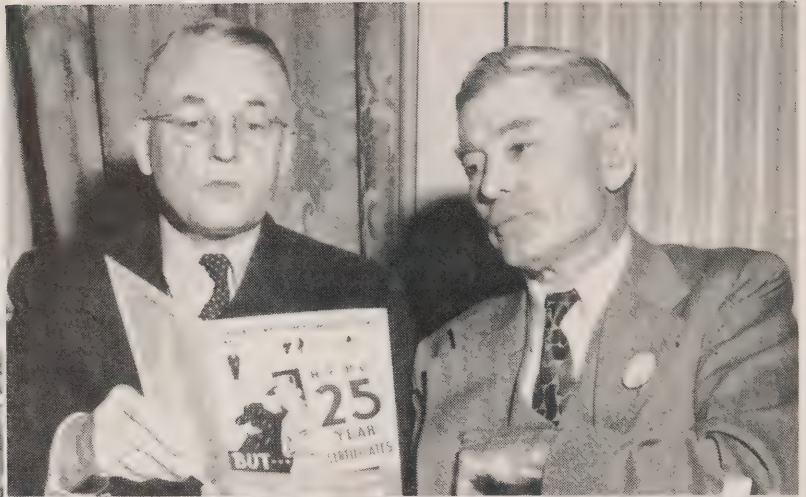
Up to the present, linemen have learned their job entirely in the field. That Hydro has been fortunate in having the services of careful and capable foremen is borne out by the exceptionally low accident rate on line work. In this connection, it is worthy of note that Ontario has the lowest accident rate in the utility business on the North American continent.

While it can be said that Hydro linemen have been vigilant and conscientious in the discharge of their duties, it has been inevitable that, in spite of rule books and regulations, local practices—especially safety practices—have naturally tended to develop among different groups, scattered, often at wide intervals, throughout the province. One of the objectives of the new training course is to standardize these practices so that line work will be carried on everywhere in practically the same manner and with the same approved methods applied to safety.

Classes will be restricted to fifty men who will be accommodated in buildings which have been specially erected for that purpose. It is expected that the course will be conducted over a period of three or four months, at the end of which, a new class will be formed.

In view of the Commission's projected Five-Year Plan to extend the benefits of Hydro throughout rural Ontario, it is likely that this school will continue in operation for some years to come, and that it may even assume a permanent character in the ever-broadening scope of Hydro service in this province.

A. H. HULL (left), president of the Ontario Hydro Quarter Century Club, and Dr. Thomas H. Hogg, chairman of the H.E.P.C. and member of the Quarter Century Club, were snapped when looking over a souvenir programme. The lower illustration is an over-all picture of the gathering.



LIFE begins, not necessarily at forty, but when one is initiated into that friendly but exclusive fraternity known as the Ontario Hydro Quarter Century Club whose total membership of 722 Hydro and former Hydro employees represents a combined service record of over 20,000 years.

This impression seems to grow upon the visitor who is privileged to sit in and watch the proceedings at the club's annual banquet which, this year, taxed the capacity of the glittering confines of the Crystal Ballroom at the King Edward Hotel, Toronto, on October 19.

As the colourful frontispiece of the programme of the evening suggested, members of this organization may be getting along in years but most of them retain that youthful exuberance and spirit of Sir James Barrie's "Peter Pan". In designing the front of the social agenda, the artist accentuated this note by cartooning a sequence of fast-stepping activities that called for a marked degree of adroitness in the Terpsichorean and callisthenic arts. The tempo implied by this artistry was a combination of Mendelssohn's "Spring Song" and high-keyed Boogie Woogie!

The youthful keynote also found expression in the expression in the presence of the lady members whose

graceful charm evoked many sincere tributes and not just courteous platitudes.

Opening up the highly-arresting programme one discovered that 1945 was "A smashing Year" not only for Germans, Japs and Atom but for the records of the Hydro Quarter Century Club. Never before in the ten-year history of the club have so many members paraded before the head table to receive the coveted gold buttons and handsome certificates on which the names are beautifully enscribed upon completion of 25 years' service with Hydro. It is unlikely, Hydro News was informed, that as many members as 172 will become eligible for membership in any one year again. Of that number, 10 were ladies.

The active and always man-on-the-spot secretary of the club, S. L. Eisenhofer, whose re-election to office every year seems to be as sure as the rising and setting of the sun each day, fingered over his records and came up with some interesting answers to questions asked by Hydro News.

For instance, there were 471 persons present at this year's banquet; the club's total membership is now 722; 35 members are on the retired list; there are 42 lady members;

(Continued on page 26)



TOP—New lady members receiving their certificates and gold buttons, from left to right, Vivian Williamson, Mildred M. Holtby, E. B. McKenzie, Mrs. Mary J. Russell.

TOP—At this table, left to right, are: Alberta McCallister, E. B. McKenzie, Belle Ralph, Belle Martin, Mildred Holtby, E. G. McNichol, Edith Anderson and Mabel Evans.

CENTRE—Edith Anderson pulls out a name while H. V. Armstrong holds the "hat" and W. Ross Strike waits to announce the "winnah." S. L. Eisenhofer can be seen in the background ready to assist.

CENTRE—Another lucky number prize winner. This time Mildred Holtby gets the "loot," with W. Ross Strike keeping up the good work and Edith Anderson assisting.

BOTTOM—The two lucky gentlemen at this table are surrounded by E. K. Toole, S. E. Hartwick, Jean McNaughton and Mary E. Douglas.

BOTTOM—This group includes: Etta E. Johnson, Tessa MacPherson, Alice P. C. Parsons, Mrs. Mary J. Russell, Vivian Williamson, Grace C. Coughlin and Keitha Woodley.





TOP—Dr. Thomas H. Hogg, H.E.P.C. chairman, had a busy evening presenting over 140 certificates and gold buttons. Here he is in action.

TOP—Harry Wailling and his friend from Niagara Falls discuss the attractive lettering on the Ontario Hydro Quarter Century Club certificates.

CENTRE—A. S. L. Barnes of the H.E.P.C. laboratory staff was following the proceedings with interest when the photographer got this arresting study.

CENTRE—The photographer was right on the job when J. H. Mackay received his certificate and gold button. Next in line is D. C. McAdam.

BOTTOM—This illustration would tend to prove that there were a few serious moments during the evening. Members identified are: Elie Brunelle and P. T. Gaston.

BOTTOM—A line-up of new Quarter Century members waiting to receive congratulations and certificates from Dr. Thomas H. Hogg, H.E.P.C. chairman.





TOP—A section of the head table, including: G. F. Ronald; Osborne Mitchell, H.E.P.C. secretary and a guest of the club; R. T. Jeffery and M. J. McHenry, another guest.

TOP—Another section of the head table includes: George Brown, B. O. Salter, S. L. Eisenhofer, A. H. Hull, Dr. Thomas H. Hogg and W. Ross Strike.

CENTRE—This section of the gathering was snapped during the entertainment period. Among the group are: F. A. Robertson, F. H. Chandler, J. E. Tuck, D. B. Fleming and W. A. Armstrong.

CENTRE—When old acquaintances get together. This informal group includes: W. H. Turpin, John Dibblee, A. McPherson, W. S. Tinworth, C. G. McEvoy, A. G. Hall, H. J. McCaw and George Shierlaw.

BOTTOM—Another group of interested onlookers includes: G. F. Drewry, R. M. Thompson, H. D. Rothwell, J. J. Jeffery and J. S. Lotimer.

BOTTOM—There was a Hawaiian number on the entertainment programme. Perhaps some members of the audience will "discover" themselves.



MEET IN HAMILTON ON DAY CITIZENS WELCOME CRERAR

**Canadian Commander-In-Chief A Former Hydro
Man — District No. 5 O.M.E.A.
Elects New Officers**

BY a coincidence, while district No. 5 of the O.M.E.A. was holding its annual convention in Hamilton, the city was welcoming back a native son, General H. D. G. Crerar, Commander-in-Chief of the Canadian Forces Overseas, a former Hydro man who, in earlier days, had been prominently associated with the electrical developments in the province.

On first thoughts, a suggestion was made to adjourn the meeting in order that fitting tribute might be paid to a great Canadian soldier who, it was recalled, was in charge of the Commission's laboratory and stores department between 1912 and 1914 and who also served Hydro as production and service engineer. (In 1920, General Crerar left the Commission to resume his military career as General Staff officer at Ottawa.)

Finally, the delegates decided that an adjournment might be construed as desertion from duty. It was, therefore,

decided to continue the meeting until the agenda of business had been completed.

In the absence of president Roy Pierson of Brantford Township, during the first part of the meeting, first vice-president Richard Thomson of Paris presided.

Speakers at the meeting included Wills MacLachlan, head of the employees relations department of the H.E.P.C., and W. Ross Strike, president of the O.M.E.A. and a Hydro Commissioner.

It was decided that the pre-war practice of having two committee meetings a year could now be resumed, the transportation problem having been somewhat eased. The spring meeting will be held at Queenston, if accommodation can be arranged.

During the afternoon session, the election of officers was held, the present executive having resumed office last year by acclamation. The following were elected for the ensuing year: president, Richard Thomson, Paris; vice-presidents, George Austin, Dundas, and Keith MacLeod, Stamford Township; directors, J. R. Forbes, Waterford; Thomas Barnes, Niagara Falls; Albert Nelson, Fonthill; and Robert Turner, Merriton.



DURING THE luncheon session of District No. 5, O.M.E.A., the delegates paused long enough to "watch the birdie."

NIAGARA FREQUENCY CHANGE-OVER BEING STUDIED BY COMMISSION

Hydro Cannot Be Criticized For 25-Cycle Problem Which Was Inherited, Says Dr. Hogg—Also Discusses Difficult Problem Created By Post-War Increase In Load—Addresses Joint Meeting Of Districts 7 and 8, O.M.E.A. At Sarnia

HYDRO cannot be criticized for the fact that the Niagara division of the Southern Ontario system has 25-cycle power. That frequency was adopted following an investigation made by five international scientists between 1894 and 1896 long before Hydro which inherited the 25-cycle problem in 1907 when the Commission first obtained power from the existing Niagara developments and commenced transmission in Ontario.

These points were emphasized by Dr. Thomas H. Hogg, chairman of The Hydro-Electric Power Commission of Ontario, when addressing a joint meeting of districts 7 and 8 of the Ontario Municipal Electric Association at Sarnia on October 17.

He explained that the 25-cycle frequency at that time was regarded as the most efficient for the long distance transmission of power. It had been recommended also by the engineers of that day as the frequency which was best adapted to the operation of certain types of equipment.

Before making any decision on the question of changing over to 60-cycle, Dr. Hogg said that the Commission had to have complete data on all the technical and economic problems which were now being studied. His own feeling was that the Commission might attempt a progressive solution of the problem. The change, he warned, could not be made quickly and if any municipality wished to change over right away it would have to put in frequency-changers.

Not An Over-Night Job

Aside from the difficulties of flicker, the Hydro chairman believed that 25-cycle was as good as 60-cycle for many purposes. On the whole, he did not think that the domestic consumer was troubled very much. Television, he pointed out, was a different story as it had to be tied

in by wire with the generating source of the waves and it was impossible to receive a 60-cycle wave in a 25-cycle area.

"I have tried to be as frank as possible with you so that you will not become impatient," said Dr. Hogg. "We are not going to do this thing over night. We will let you know what the problems are and what it will cost before we make any decision."

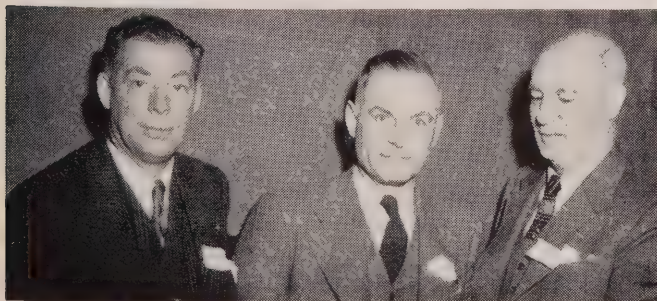
Discussing the question of loads, the Hydro chairman said that it had been expected that, at the end of the war, there would have been a considerable recession.

"From the standpoint of supply we looked forward to that recession," he said, "because during the period from 1939 on it has been a case of load coming on load and increase on increase, with the result that generating stations, transformer stations and even distribution stations were loaded to capacity."

That situation, continued Dr. Hogg, had its disadvantages in that to meet these loads, it had been necessary to run plants at full load or overload capacity and, therefore, it had been impossible to do any repair work. That situation had been aggravated further by the fact that during the war years they could not get materials, with the result that many repairs and extensions that should have been done had to be left until after the war.

"We felt that with the dropping off in the war load, we would have reserves which would enable us to take out sections of the plants in order to bring them back to full efficiency," continued the speaker. "Instead of that we find that now, a few months after the war, we are facing loads in this system of 100,000 to 150,000 horsepower more than last year, and this on top of what we felt was a peak load last year."

Dr. Hogg said that it was a difficult situation to



DISTRICT NO. 7 officers re-elected are, left to right: H. R. Henderson, Woodstock; P. R. Locke, St. Thomas; and J. Bev. Hay, London.



DISTRICT NO. 8 officers, left to right: E. C. Morand, Tecumseh; R. M. Durnford, Sarnia; Charles Austin, Chatham; A. P. St. Louis, Riverside; and W. P. Bolton, Windsor.



G. R. HENDERSON (left), chief engineer of the Polymer Corporation at Sarnia, guest speaker at the evening banquet.

THIS GROUP (centre) was snapped during the afternoon session and includes J. D. Dean, Wheatley; W. L. Wilson, Tilbury; J. R. Sullivan, Woodstock; Claude McMann and G. N. Galloway of Sarnia.

IN THE illustration on the right are included P. L. Mousseau and T. I. Leblanc of Belle River; H. O. Jones, Merlin; G. L. Mistele and Ernest Lashwood of Rodney. Some of the head table guests seen in the background are J. T. Barnes, Sarnia; Dr. Thomas H. Hogg, H.E.P.C. chairman; W. Ross Strike, president of the O.M.E.A. and H.E.P.C. commissioner; Osborne Mitchell, H.E.P.C. secretary.

handle but they could do so by reason of the fact that, with several million people using an accumulated peak load of 2,000,000 horsepower in Southern Ontario, their varied activities were not the same as a year ago. Manufacturing plants were not doing the same work. The diversity factor helped and, with a little controlling of voltage, they were able to handle the loads.

Expected Drop-Off In Load

"But," he reminded his audience, "we were not ready for this, and there are two reasons why. First, we fully expected a drop-off in war loads and, secondly, we could not have done anything else under the circumstances because it was impossible to secure labour and materials to build new plants."

For the next year or two, Dr. Hogg continued, it would be difficult to get materials and, under the best conditions, it took two years in which to build a generating plant. Therefore, he said, they had to look to two or two and a half years before they could get any appreciable increased plant. There was, he pointed out, a certain amount of material available now for transmission and distribution systems and they were getting it as quickly as possible.

"You will have to bear with us," said Dr. Hogg, "for the balance of the winter and into next year unless we get some recession in what we might still call war loads. We will do the best we can for you until we can bring in new capacity."

Proceeding, he announced that the Commission was going ahead with a new line from Kent (Chatham) transformer station north and they hoped it would be completed early next summer.

So far as new generating capacity is concerned, Dr. Hogg said he could not go into any detail at present as plans were not yet sufficiently crystallized. They had, he stated, ordered materials and equipment to proceed with

the installation at DeCew Falls of a new 70,000 horsepower unit which, it was expected, would go into service in the summer of 1947. In the next few weeks, he said, the Commission hoped to be in a position to definitely announce that they were going to start construction of a new plant on the Madawaska in Eastern Ontario. Dr. Hogg also expressed the opinion that conditions were perhaps more favourable for an early decision on the St. Lawrence than at any time in the past.

W. Ross Strike, president of the O.M.E.A. and H.E.P.C. commissioner, pointed out when addressing the joint meeting, that it was up to the Hydro to do its share in relieving any postwar unemployment. He spoke briefly on the training school for linemen already established in Toronto, at which 150 men were enrolled and to which the municipalities would be permitted to send men for training.

Continuing, Mr. Strike said that as electrical domestic appliances became more plentiful it would be necessary to have trained men to install them, and the H.E.P.C. expected to have training courses for that type of work also. The speaker stressed the importance of co-operation between the Ontario Hydro and the municipalities.

G. R. Henderson, chief engineer of the Polymer Corporation, one of the guest speakers at the evening banquet in the plant cafeteria, said in his opinion there would be a place in the postwar world for both natural and synthetic rubber, and that the Government-owned plant in Sarnia would continue to serve this country for a long time.

He went on to say that the immediate future of synthetic rubber was dependent upon the fundamental principle of how much it would cost to produce a good tire. Although there were limitless uses for rubber, the automobile tire still used about 75 per cent of the rubber produced.

Continuing Mr. Henderson said: "Quality is not a



THIS GROUP (upper left) appears to be in a jovial mood even though they are waiting for dinner. Included are: David Irving, Roy Warwick, William Neil and P. S. Shillington, all from Blenheim.

IDENTIFIED IN the upper right illustration are: J. L. Stonehouse and Stanley Ellerker of Forest; F. H. May, St. Marys; W. Bolton, A. E. Ditchburn, James Kirby and H. E. Statham of Strathroy.

SEEING HOW synthetic rubber is made (lower left) was a highlight of the convention. These visitors include J. Bev. Hay of London and Kenneth Christie, K.C., of Toronto.

DELEGATES WATCHING (lower centre) another process at the Polymer Corporation at Sarnia. Included are: S. W. Webster, Tillsonburg; Charles Austin, Chatham; Garnet Edwards, Windsor.

AT THE end of the trail (lower right). This is where the crude synthetic rubber is put in bags ready for shipment. F. H. May of St. Marys; Kenneth Christie, K.C., of Toronto, and H. R. Henderson of Woodstock are among interested onlookers.

subject to be passed over lightly, but, at the present time, passenger car tires are made almost 100 per cent from synthetics and are very comparable in service to those manufactured before the war."

He pointed out that there were many applications for which specific types of synthetic rubber were superior to natural rubber. For example, the butyl rubber, which was made at Sarnia, had characteristics that made its use for inner tubes highly desirable, and it was the general opinion that this material had already superseded natural rubber for tire inner tubes.

A feature of the day's programme was a tour of the publicly-owned synthetic rubber plant where more than 150 delegates saw many operations in the manufacture of Buna-S and butyl rubber.

Later in the afternoon, members of the two districts held their respective business meetings in the plant staff house. District No. 7 was presided over by H. R. Henderson of Woodstock, and District No. 8 was under the chairmanship of J. T. Barnes of Sarnia.

During the business session of District No. 8, the following resolution was passed:

"Whereas the Dominion Government imposed a Dominion war revenue sales tax of 8 per cent on all domestic Hydro bills to raise additional monies for the prosecution of the war, and,

Whereas this tax has been in force for five years having been effective from September 11, 1939, and,

Whereas this is a special tax on the consumers of household electrical energy and is not universal in its application to all the citizens of Canada, and in this respect is unlike the 8 per cent sales tax on consumers' goods.

Now therefore be it resolved that this gathering favour its repeal, and that a copy of this resolution be forwarded to the O.M.E.A. for their consideration."

Officers for District No. 8 elected for the ensuing year are as follows: chairman, R. M. Durnford, Sarnia; vice-chairman, Charles Austin, Chatham; directors: A. P. St. Louis, Riverside; Warren P. Bolton, Windsor; E. C. Morand, Tecumseh; secretary, P. E. Battram, Sarnia; auditors; E. J. Blake and J. T. Barnes of Sarnia.

Officers re-elected for District No. 7 are as follows: chairman, H. R. Henderson, Woodstock; directors, J. Bev. Hay, London; P. R. Locke, St. Thomas; secretary, H. F. Parker, Woodstock.

PRESENT LIFE-SAVING AWARDS AT GALT P.U.C. STAFF DINNER



CAMERA VIEW of the Galt P.U.C. dinner party. H. O. Hawke, chairman of the local commission presides and at his right is Mayor Serviss and on his left the guest speaker, Wills Maclachlan, chairman of the Accident Prevention Committee of the C.E.A.

Good fellowship was the keynote of the dinner held on Monday, October 1, at the Iroquois Hotel in Galt, when the Galt Public Utilities Commission played host to their staff, H. O. Hawke, chairman of the local commission presiding.

After a convivial dinner to the accompaniment of accordion and xylophone music the business of the evening got under way. This was mainly the presentation of life saving awards to a group of local men who had recently done fine work in saving the life of a fellow workman suffering from electric shock.

Crew Members Assisted

The victim, Gordon J. Krupp, received an electric shock while disconnecting a live transformer bushing. Within ten seconds foreman A. J. Douglas commenced

resuscitation and along with P. E. Worden alternated for one and one quarter hours before other help came. Signs of life were noticed at the end of thirty minutes. The patient was taken to hospital and further assistance was given by other crew members.

Congratulated On Quick Action

Wills Maclachlan, chairman of the Accident Prevention Committee of the C.E.A., stressed the value of resuscitation by the Schaefer Prone Pressure Method in cases of electrical shock, gas asphyxiation, drowning or other accidental causes of suspended respiration.

He congratulated the men on their quick action and explained that in such cases, if resuscitation were started within one minute, that ninety per cent of cases were

(Continued on page 23)

HYDRO TO BUILD NEW POWER PLANTS AS QUICKLY AS MATERIAL AVAILABLE

**Problems Affecting Supply of Power Discussed By Dr. Hogg At Eastern
Ontario Electric Association Convention—Plans For Extension
Of Service To Be Undertaken With All Possible Speed**

PROBLEMS affecting supply of power, which may hitherto have failed to receive due consideration from communities where temporary power difficulties are felt, were discussed by Dr. T. H. Hogg, chairman of The Hydro-Electric Power Commission of Ontario, and other speakers, at the annual convention of the Eastern Ontario Electric Association held in Brockville on October 4. Perhaps on no other occasion had the whole Hydro picture been so well illuminated. Hydro plans and activities were touched upon from many important angles in frank and instructive addresses, which clarified situations that, here and there, were reported to have given rise to misunderstandings.

Summing up, the picture presented was about like this: Instead of a temporary falling-off in the demand for power loads as might reasonably have been expected at the close of the war, there had been a continuance of the present high demand. This had imposed a considerable strain upon the physical structure of the Commission, which, owing to the restrictions on labour, equipment and material, had had to carry on during the long war years on a basis of bare maintenance. Until this condition could be remedied, there were bound to be occasional shortages in the delivery of power and in the regularity of supply. The aim of Hydro was, however, constant and unswerving. With all possible speed, as construction material and labour become available, new developments would be undertaken, new installations and equipment would be introduced, and the Commission would carry out its plans for the amplification and extension of electrical services until the goal had been reached in the provision of ample power for the needs of consumers in every part of the province.

Programme Of Expansion

"Throughout the whole area of southern Ontario," Dr. Hogg explained, "we are delivering nearly double the power we were called upon to supply in the immediate period before the war. Our present structure is now carrying twice its former load, and, on account of lack of construction material, we have so far been unable to build the new lines and transformer stations necessary adequately to meet the situation. I want to bring this fact clearly to your attention because of certain criticisms in some quarters about inadequate voltages and irregularity in service. We are working as rapidly as we can to remedy the situation, but it is going to take a little time."

Increases in domestic and municipal loads, Dr. Hogg stated, had more than offset any decreases in industrial load. It was still expected that there would be a decrease in the industrial load as cut-backs in war production became effective. The Commission, itself, would welcome some recession in order that it might have a better

opportunity to carry out the urgent rehabilitation work that lay ahead of it. Many of the old facilities provided twenty or thirty years ago had become inadequate for best efficiency in the enlarged system the Commission was planning to develop.

In order that extensions and rehabilitations might be made in an orderly manner to dovetail into a master plan, the planning engineers of the Commission had been studying various possibilities of load growth that might develop throughout Ontario during the next 10 or 15 years, and determining the best sequence of power developments and arrangements of transmission and other facilities to meet the growing needs. To meet the cost of maintenance work which had had to be so long deferred, and of new construction involving many overdue improvements and additions, the Commission and the local utilities had set aside during the war period special reserves and had accumulated surpluses. These were ear-marked for a programme of expansion which would entail the expenditure of \$6,000,000 a year by local utilities and of at least \$12,000,000 a year by the Commission, itself, for some time to come.

What "Surpluses" Mean

Dr. Hogg had a word to say about "surpluses." The term was not to be regarded as synonymous with "profits," as it was generally regarded in private enterprises. "Surpluses," as applied to Hydro, represented monies available to maintain and improve plants and property and to take care of past deficits. There was no enrichment of Hydro or of the public utilities associated with it. Good times for Hydro simply meant their translation into better times for the consumer in reduced rates and more efficient service.

Increasing Power Demands

Forecasts indicated that an additional 60,000 to 100,000 horsepower would have to be supplied by the Commission each year to meet mounting demands. Some people had asked why, if the funds were available, the Commission did not proceed immediately with the necessary new extensions and installations. It must be remembered, Dr. Hogg pointed out again, that there was not only, at the moment, a lack of labour but also a dearth of material. There was a back-log of orders from Hydro that manufacturers had been unable to fill. The chairman counselled at least a modicum of patience until the labour and material market righted itself and the Commission was able to proceed full-stride on the many important undertakings it was planning to meet the electrical needs of the public at large. In the meantime, everything that could possibly be done with the material available

was being done, as witness the new installations at the DeCew Falls plant near St. Catharines, whereby an additional supply of 70,000 horsepower would be provided for the Southern Ontario System.

Looking Ahead

Drawing aside the curtain of present difficulties, Dr. Hogg gave his audience a glimpse of the plans Hydro is making to adapt electrical services to the everyday (and night!) requirements of growing and progressive communities. After referring to the Five-Year plan for rural electrification, which the Commission is already lining out on the mark ready for the take-off, he went on to say:—

"It is expected that in carrying out municipal improvements in the post-war period, there will be a great increase in community beautification and welfare work, resulting in the making of provision for assembly-rooms, libraries, educational and recreational facilities. Included in the requirements for recreation will be baseball diamonds, bowling greens, tennis courts and skating rinks. Hydro service will contribute substantially to the satisfaction given by these community efforts . . . Improved street and highway lighting," the speaker added, "is much overdue, and will greatly contribute to safety in the days of increased highway traffic just ahead of us."

Must Satisfy Consumer Needs

W. Ross Strike, president of the O.M.E.A., and Hydro Commissioner, reminded the convention at its morning session, that post-war plans were now no longer plans but realities, and that the local commissions had to face their problems. There was need of a great deal of rehabilitation in the local systems in order that future consumer demands might be adequately met. As appliances came on the market, he said, local utilities had to make sure that the needs of their customers were satisfied. Then, too, many of the local commissions were under-staffed. They had to see to it that young men of the type required were enlisted in Hydro and that their training began at once.

Training Of Linemen

Mr. Strike referred at some length to the training of personnel. Electrical services had to be maintained. They could not be interrupted on every occasion when repairs had to be made. Ignorance on the part of linemen and others meant hazards to life and limb. A certain amount of technical training which would give them a sound knowledge of their jobs was essential for all Hydro workers. A training school for linemen had now been set up in the neighbourhood of Toronto.

"We now have 150 applicants for the course, which lasts about three months," Mr. Strike said. "Our suggestion to you municipalities is that, where you find a likely young man, you take him in and employ him as a beginner. Pay him reasonable wages, and try him out. If he proves satisfactory, he can be sent to the Hydro school and finished off as a well-trained lineman. In this way, an efficient and uniform standard will be set up throughout the province."

Thought would also have to be given, the speaker intimated, to men who could service appliances. Local commissioners had to be prepared to give the representatives of electrical equipment manufacturers every assistance.

Co-operation In Five-Year Plan

Describing the Five-Year plan for rural electrification as the most ambitious and progressive programme of its kind ever undertaken in the province, Hon. George H. Challies, Hydro commissioner, solicited the fullest co-operation with the Commissions of all the rural areas involved. The Five-Year plan had been pretty well worked out in all its details, the speaker announced, and was only awaiting the necessary material and additional recruiting and training of construction crews. Already, the Commission had received in the neighbourhood of 14,000 applications for rural service, involving the construction of 2,500 miles of line.

During the coming year, when the Five-Year plan would be launched, it would be necessary, Mr. Challies explained, to rebuild certain lines forming the main framework of the Hydro rural systems. This reconstruction, essential to satisfactory service, was much overdue, and had only been delayed because of war-time conditions.

The whole rural programme of the Commission, it was pointed out, was being greatly helped by the comprehensive revision recently made in connection with rural Hydro rates. The low uniform rural rates now in effect afforded a challenging opportunity to the farmer, himself, to make more and better use of Hydro service. Nothing he could buy would give him so profitable a return on his investment.

Lower Rates To Consumers

Reductions in Hydro rates, authorized at the beginning of the present year, and rebates made by numerous municipalities had brought benefits to customers in the Eastern Ontario division to the extent of \$531,368, according to the report made to the convention by G. F. Drewry, system engineer. Interim rates for power to cost municipalities had been reduced by about \$3.00 per horsepower. In some cases, the reduction in the rate was as much as \$6.00 per horsepower, due to the ceiling price of \$39.00, which was agreed upon between the O.M.E.A. and the Commission.

Load Growth In East

Mr. Drewry presented a healthy picture of load growth in Eastern Ontario, which, during the past ten year period had increased nearly 120 percent. In spite of the fact that the present was a conversion period during which industry was making plant changes for peacetime production, there had been no over-all reduction in power demands. It was expected, however, that the present level would be fairly stabilized during the winter months.

Rural extensions in the Eastern Ontario area (normal construction not associated with the Five-Year plan) had been held up by a lack of material and other causes. At the end of August about 210 miles of new line had

(Continued on page 18)



SWAPPING EXPERIENCES at the convention (top, left to right) are: H. D. Cleminson, Wellington; S. J. Babe, Oshawa; W. Tait, Picton; G. F. Shreve, Oshawa; and H. B. Tully, Picton.

NEW OFFICERS of the Eastern Ontario Municipal Electric Association are: (centre, left to right), H. B. Tully, Picton, vice-president; George Findlay, Carleton Place, president; T. Andre, Kingston, vice-president; S. J. Babe, Oshawa, representative to O.M.E.A.; M. W. Rogers, Carleton Place, secretary-treasurer; M. P. Duff, Belleville, representative to O.M.E.A.

"WHAT WOULD we do without you?" gallantly ask George H. Smith (left), and Robert A. Coleman, of Port Hope, of Miss L. C. Beatty, who keeps them from forgetting things.



WATCHING HIS companion out of the corner of his eye lest he help himself too liberally, Ontario Hydro commissioner W. Ross Strike shares a presentation box of mixed "goodies" with Kenneth A. Christie, K.C., commissioner of Toronto Hydro.



ONTARIO'S "DOWN-EASTERS" get together. Prescott (left to right) are chatting with hails



DELEGATES RESPOND (upper centre) to an (centre) as th

UPPER LEFT—Hon. G. H. Challies and Dr. T. Farquharson of

LOWER LEFT—W. J. Tooley, S. T. McCann

UPPER RIGHT—An Arnprior group—W. P. J.

LOWER RIGHT—Hydro commissioner W. R.





W. J. Ranson, and W. G. Fraser
H. Challies, Hydro commissioner, who



THAT ONE from R. J. Smith (left) manager,
Perth public utilities commission, was right on
the beam. George Phillips, (centre) secretary,
and E. V. Dyke, chairman of the Smith Falls
Hydro-Electric Commission, were quick to appreciate it.



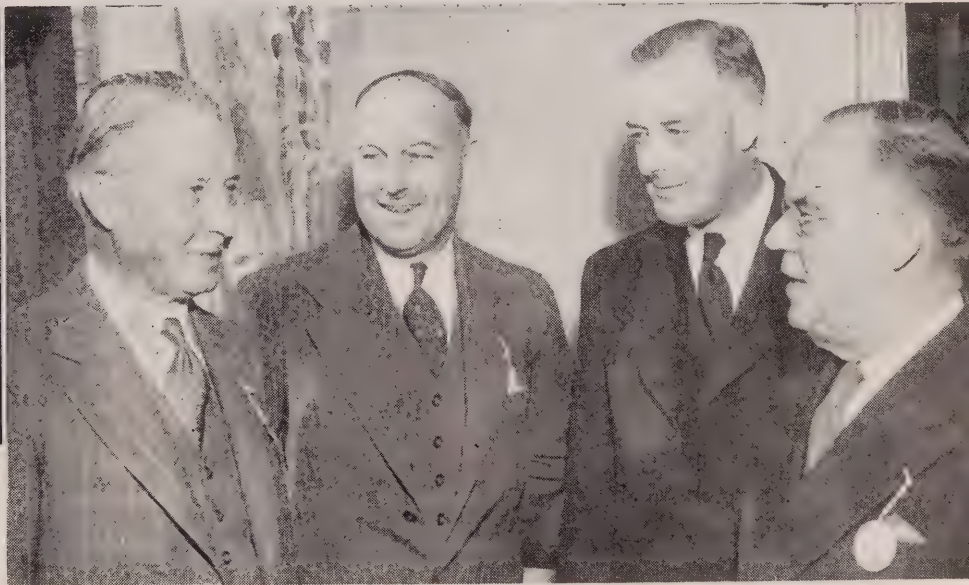
of wit, and settle down to close attention (lower
session proceeds.

chat with Mayor N. S. Cuthbertson, while A. L.
C. enjoys a smoke.

G. Conley of the Westport Hydro greet the camera.

D. L. McKerracher, Dr. A. H. Reid and R. A. Jeffery.

sents a T-square to R. L. Dobbin, manager of
U.C.



HARNESSING HORSEPOWER!



WHEN A farm is not equipped with electricity many important chores may have to be performed by sheer hard labour that could otherwise be accomplished smoothly in the twinkling of an eye. At this farm near Bethel, Vermont, a good-sized horse on a treadmill, two strong men and a robust woman are marshalled for the task of sawing wood. Hydro News is indirectly indebted to the famous arctic explorer, Vilhjalmur Stefansson, for the photograph, which was sent to Dr. Thomas H. Hogg, chairman of the H.E.P.C., by G. R. Ball of the Bank of Montreal agency in New York.

TO BUILD PLANTS

(Continued from page 14)

been completed. System extensions included a 110,000 volt line to Chalk River, and a 44,000 volt line, with a transformer station, from Maxville to Plantagenet. Labour conditions in the Eastern division were now considerably improved, Mr. Drewry stated, and the Commission was now in a position to build up the staff in each district so as properly to take care of the work in hand. Present plant capacities and power sources for 60 cycle supply in Eastern Ontario totalled about 260,500 horsepower. This, of course, did not include power supply that might be made available in emergency from other divisions of the system through the contemplated setting-up of additional frequency changer sets as material became available.

Safety Training Urged

The importance of training Hydro linemen and other workers in safety methods and especially in artificial respiration was stressed by Wills MacLachlan, head of the employees' relations department of the H.E.P.C. Under the Workmen's Compensation Act, the cost of accidents in industry was borne by employers. It was on record, he stated, that the cost of one accident alone

had amounted to \$80,000. If there were accidents, there were bound to be costs. The only sensible plan was to prevent them. That could be effected by the provision of reliable tools and equipment and through the careful training of the men.

Features of the convention were a questionnaire period and the exhibition of a movie by M. J. McHenry, the Commission's director of promotion. This picture, centred in a human-interest story, showed the benefits that are derived from the use of time and labour-saving electrical appliances around the farm.

The president of the Eastern Ontario Municipal Electric Association, George Findlay, presided at all sessions of the convention, and put through an unusually heavy one-day programme in a brisk and business-like manner.

Officers Elected

Officers for the ensuing year were elected as follows: president, George Findlay, Carleton Place; vice-president (west), H. B. Tully, Picton; vice-president (east), Thomas Andre, Kingston; secretary-treasurer, M. W. Rogers, Carleton Place; directors, Gordon Matthews, Peterboro; C. E. Pickering, Ottawa, and S. J. Babe, Oshawa; representatives to the O.M.E.A., James Halliday, Kingston, and M. P. Duff, Belleville.

Come into the GARDEN

By Leon Van Cleemput, L.S.C.-A.H.
Chief Horticulturist, University of Toronto

AUTUMN is a season of great promise to the busy gardener. Shrubs and trees set out in the fall fulfil their promise each year; they enclose the garden with walls of flowers and foliage and shade friendly, inviting nooks. Flower borders, arranged and planted now, yield beauty, fragrance and gaiety next summer.



Plump little bulbs planted now give promise of glorious springtime colour. So let us look over what we can do this fall to make that colourful, inviting spot you wish your garden to be next year.

SHRUBS. When shrubs are set out in a garden, we must first of all realize that they will flower and bear fruit profusely only if they are fully exposed to the sun. Their position, therefore, must be chosen accordingly. If planted too close to a walk or the door of a building, the branches will soon be in the way, and, if they have to be continuously restricted by pruning, the normally graceful and pleasing habit of the shrub will be permanently spoiled.

If, for instance, the average height is given as six feet, the eventual spread of its twigs can be expected to be the same. Tall-growing shrubs such as Persian lilacs, crabapples and Hawthorns should not be planted closer than six feet to a walk and no closer than fifteen feet from each other.

PRUNING OF NEWLY-PLANTED SHRUBS. Shrubs differ from trees in their characteristic habit of producing many shoots from the same base and in the fact that they continue to send up new shoots each year as long as they live. Trees on the other hand produce but one trunk which gradually increases in thickness and divides into branches some distance from the ground.

In the treatment of shrubs we distinguish three different types of pruning; at planting time, pruning shrubs which are well established, and pruning to rejuvenate

old shrubs. At this moment I will deal only with pruning at planting time. When planting a young shrub our aim should be to help it as much as possible to assume its natural shape. Therefore, some of the strongest, youngest shoots should be entirely removed and down to the very ground. All others must be left unclipped, so that the normal shape and habit of the shrub are preserved. The amount of pruning required depends upon the condition of the roots, and for this reason pruning should be done before planting.

PROPAGATION. Many of your shrubs can be easily propagated by layering or by cuttings. Layering is done by bending some of the branches to the ground and pegging them a couple of inches into the soil. This method of propagating is naturally limited, but is sufficient for most private gardeners. If you want propagation on a wider scale, the simplest and easiest method is the following: Make a little hotbed, put some strawy manure in the bottom, then some light clay soil and about the middle of October make some cuttings, this year's growth, of your shrubs, five to six inches in length. Cut just below a leaf, strip off all the leaves except those at the top, and insert them in this soil. After planting, wet down thoroughly, put on the sash tightly and forget about them till next Spring. Once the weather warms up, give them some fresh air and most of your cuttings will be nice growing plants before the new season starts. Besides shrubs, climbing roses, hybrid perpetuals and polyanthus can be started the same way.

USEFUL SHRUBS. Selecting shrubs in a catalogue is very often a difficult job, so I consider it advisable to mention some of the best shrubs for decoration of the home grounds. The varieties given are generally available from local nurserymen. In the tall ornamental flowering shrubs the Oriental and the French Lilacs are the foremost in this group, followed by the asiatic crabapples or Malus and the June berry, called Amelanchier Laevis or Canadensis. It has reddish young foliage, giving a pleasing contrast to the snowy white, profusely-blooming flowers.

In the medium-sized flowering shrubs, several are outstanding. Though Spiraea Van Houttii has been overplanted, it is still a beautiful shrub if planted alone or in a group of shrubs where the long arching branches

are very attractive. But it cannot be recommended as a hedge where pruning is necessary. *Deutzia "Pride of Rochester,"* the hardiest of the *Deutzias*, *Philadelphus "Virginal"* one of the best of the mockoranges, *Hydrangea paniculata grandiflora*, especially grown as a standard, *Prunus Triloba* or flowering almond and *Prunus tomentosa* or Nanking cherry with edible fruit, the *Weigelas*, the *Cydonias* or Quinces, are all excellent material. Besides those, I recommend two dwarf shrubs, not planted often enough, the *Potentilla fruticosa parvifolia*, the best of the shrubby cinquefoils, with golden yellow flowers from June until September, and the beautiful *Daphne mezereum*, with sweetly fragrant purple flowers in Spring.

SHRUBS PLANTED IN SHADE. As stated before most ornamental shrubs require full exposure to the sun to develop their greatest beauty, but often people ask if there is nothing that will grow in the shade. The most resistant ones are *Ligustrum Regelianum* or Regel's privet, *Ribes Alpinum* and *aureum*, *Rhamnus Cathartica* or Buckthorn, *Hamamelis virginiana* or Witchhazel, *Lonicera Tatarica*, *Physocarpus opulifolium* or Ninebark and the fragrant Sumach or *Rhus Canadensis*. Though all these shrubs support shade well, especially if it is not too severe, they cannot be counted upon to provide more than green foliage.

SPRING-FLOWERING BULBS. The end of the war has brought us the first bulbs in more than five years from Holland, tons of them, and will allow us to make many replacements which English and Canadian bulbs were not able to do. So little is known of the different groups of Tulips and Narcissi, that a few fundamentals may prevent misnomers in gardens and flowershows.

Most garden Tulips begin life as self-colored flowers. After a time the coloring matter gets broken up in stripes and blotches. Before this change takes place, they are known as "Breeder" or "Mother" Tulips. Directly connected with them is a vigorous race of self-colored flowers, distinguished by their strong, tall stems and shapely flowers, the Darwin Tulips. To all intents and purposes they are Breeder Tulips.

Another group of Tulips, flowering between the Early and the Darwins are the Cottage Tulips which have been found, for the most part sequestered in the old "cottage" gardens in the British Isles, since the collapse of the Tulipomania of Holland. They together with the well-known Early Tulips lack the size of bloom and the substance of later kinds.

From these groups several new races were produced: The Mendel Tulips, obtained by crossing Darwins and Duc Van Thol varieties. The Triumph Tulips, a cross between Early and Darwin Tulips. The Lily-Flowered Tulips, a cross between *Tulipa retroflexa* with a pink Darwin. And the Parrot Tulips, the Bizarres, Bybloemen, and the Rembrandt Tulips which are all produced by "breaking" the colors of Breeders and Darwins. These broken Tulips should be planted in groups by themselves to prevent them from breaking up your self-colored varieties.

As it is nearly impossible, even for the best professional to identify every class of Tulips, only three classes, the Early, the Darwins and the Broken Tulips should be mentioned in shows.

In the Narcissi or Daffodils it should be known that all of them are Narcissi botanically, but the popular name of Daffodil is usually given, in Canada, to the varieties with long trumpets, while the varieties with short cups or crowns are called Narcissi. The Jonquils are the hardy cluster-flowered Narcissi, while the Polyantha Narcissi are only useful for indoor culture. All the other Spring-flowering bulbs like Hyacinths, Crocus, *Chionodoxa*, Muscari, and Scilla are too well known to need special introduction.

PLANTING OF BULBS. How best to plant your bulbs outdoors seems to be the main question at present. To understand the proper planting of bulbs you must know how they grow. Dig one up early in the Spring and you will see that from the base has issued a fringe of white roots. These serve both as collectors of food and anchors whereby the bulb is held in place. From the tip arises the pointed stem that will drill through the solid earth and eventually open into the leaves surrounding the base of the flower stalk. Each bulb contains the flower at the moment the bulb is planted. Because of these two directions of growth, in planting bulbs we must consider the soil below, the soil immediately around and the soil above the bulb.

Do not use manure of any kind on bulbs, but set base of bulb on at least one inch of sand, fill sand around it, covering the bulb with a good sandy loam, liberally mixed with bonemeal. See to it that each bulb is planted solid on the sand. Therefore never use a pointed stick or narrow trowel for planting bulbs; with neither of these can you dig the proper hole. The bulb will hang in the hole with a deadly airpocket under it.

The depth for planting bulbs is three times its diameter as a general rule, which means that the bulb is covered with approximately twice its thickness of soil. Suppose that a bulb is two inches in diameter, then plant six inches deep, so that the bulb is covered with four inches of soil. Though this is good for nearly all the bulbs, I prefer planting Narcissi shallower, otherwise they may not bloom at all. Two or three inches of covering is enough even for the largest of the Narcissi.

IRISES. Though it is advisable to divide and transplant Irises after they finish flowering, there is no objection to planting a few good varieties now, especially as many foreign firms were unable to ship their stock earlier due to the war. However, do not expect flowers next Spring on each Rhizome planted that late.

LILIES. In buying Lilies for your garden, buy Canadian-grown stock, and as near as possible to your home. The big failure with lilies lies in the drying out of the bulb. All lilies are better kept out of the soil as short a time as possible. Only one variety of imported lilies is recommended, the Madonna Lily from Northern France.

When everything is planted, clean up your garden. Do not use old stalks of plants for Winter covering. They hibernate thousands of insects, so burn this rubbish and use leaves or excelsior for Wintermulch.

Make your garden beautiful so that you may say with Tennyson: "Flowers from all heaven, and lovelier than their names, grow side by side in my garden."

EMPLOYEE TRAINING IMPORTANT IN PUBLIC RELATIONS PROGRAMME

Sound Policies and Honest Endeavour to Serve Consumer Can Engender Public Confidence, Says M. J. McHenry, Addressing Office and Accounting Group of A.M.E.U. at London

"BUSINESS is transacted by human beings, not by adding machines," said M. J. McHenry in his address on the "Relationship of the Hydro Employee to the Public" at London recently.

The occasion was the annual gathering of the Western Ontario Division of the Accounting and Office Administration Committee of the Association of Municipal Electrical Utilities.

Mr. McHenry went on to say that any business transaction involved public relationship and that this relationship was either good or bad depending on the attitude of the public towards the organization. The general public, he stated, must necessarily get their opinion of Hydro from their contacts with the employees, and he stressed the importance of training these employees throughout Ontario so that they could fairly represent Hydro policies.

"Creating confidence in the public mind," he continued, "can be carried out in many ways, but confidence can be engendered only where there is evidence of sound policies backed up by an honest endeavour to serve the consumer."

He mentioned various ways that certain utilities in the United States were using to check their progress with regard to public relations. He said that the task of maintaining the friendship and support of the public was divided into two parts. First, there was the service offered; this was a strictly technical service which the

public, quite rightly, took for granted. The second part was making friends, and here the employee could play an important part.

Mr. McHenry said that there were four things that the employee should keep in mind constantly when dealing with the public: (1) interest in the consumer; (2) courtesy; (3) good personal appearance; (4) pleasant aspect.

At the close of his speech, Mr. McHenry showed an educational film which illustrated these points.

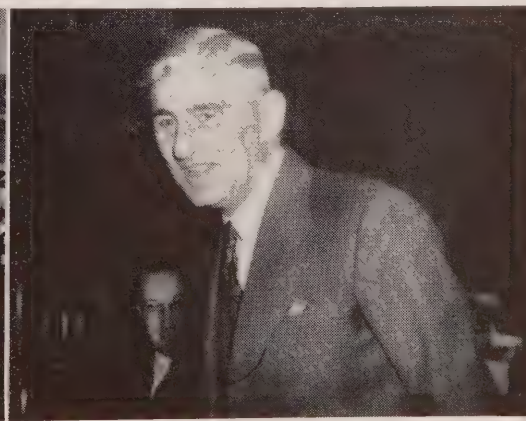
The weather smiled on the A.M.E.U. convention in London on October 18, and there was a record enrollment of 128. The proceedings got off to a good start with a luncheon in the Hotel London, W. E. Wallace, of Windsor Public Utilities, presiding.

Life-Saving Awards Presented

The first item on the programme was the presentation of life-saving awards by Wills MacLachlan representing the Canadian Electrical Association, to two linemen from the Aylmer Rural Power District. Fred D. Roberts received a medal for resuscitating a fellow workman from electric shock last June and Albert Everitt, a boy of 16, received a certificate for giving valuable assistance.

Mr. McHenry's speech followed and afterwards J. E. Teckoe of Galt, chairman of the afternoon session, moved a vote of thanks to the speaker and then led a spirited discussion on points arising from the speech.

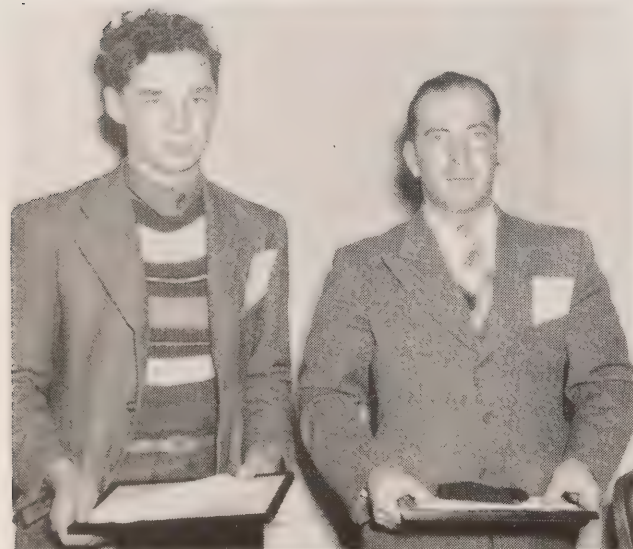
The last item was an address by Graham C. Ferguson of the Burroughs Adding Machine Company of Canada. This was the first in a series of talks that the A.M.E.U. have planned to be given by representatives of firms that



ALL EYES on the speaker—a general view of the luncheon convention of the A.M.E.U. Right, M. J. McHenry, H.E.P.C. director of promotion and guest speaker, shares a joke with his audience.



THEY'RE BOTH Fergusons but one of them must have been brought up on spinach! Left, guest speaker Graham C. Ferguson, Windsor, and right, W. H. Ferguson, Toronto. Right: Among those at head table are J. E. Teckoe, Galt; M. J. McHenry, W. Edgar Wallace, convention chairman, and Roy S. King, Midland.



ALBERT EVERITT, left, and Fred Roberts of the Aylmer R.P.D. exhibit the C.E.A. life-saving awards they have just received. The latter has a medal for resuscitation and the former, a boy of sixteen, a certificate for valuable assistance.

EMPLOYEE TRAINING

(Continued from last page)

are members of the Association. Mr. Ferguson gave a detailed description, using charts as illustration, of a system of bookkeeping to be used in conjunction with the accounting machines. He said that the system could be adapted even for small offices.

R. S. King of Midland, chairman of the main A.M.E.U. committee, extended greetings and expressed his appreciation of the work being done by the Western Ontario division.

A. J. DOUGLAS RETIRES

Some eighty friends and fellow workers gathered at the Commercial Hotel, Preston, on November 2 to honour A. J. Douglas upon the occasion of his retirement from the Commission's operating department.

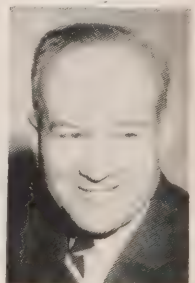
Mr. Douglas received his early electrical training in Scotland, coming to Canada in 1911 to work with the Canadian Pacific Railway. He served with the Canadian forces in the first Great War and was wounded in action. After a short time with the Grand River Railway, he joined the Station Maintenance section of the Operating Department in 1920. In 1923 he was made foreman in the Preston-Kitchener-Guelph district and has served in that capacity ever since.

On behalf of Hydro friends, J. S. Lotimer, superintendent of the Niagara Division, presented Mr. Douglas with a tri-lamp and ash tray.

STRIKE APPOINTED K.C.

Appointment of W. ROSS STRIKE, a Hydro commissioner since June, 1944, as one of the new King's Counsel for the province has been announced by Attorney-General Leslie Blackwell. Mr. Strike graduated in 1920 from Osgoode Hall, and has practised law in Perth and Bowmanville.

Born in Prince Edward County in 1895, Mr. Strike saw active service in France during the First World War, was twice wounded, and received the French Medaille Militaire at Vimy Ridge. He was mayor of Bowmanville from 1933 to 1937, and for some time was chairman of the Bowmanville Public Utilities Commission. Succeeding Kenneth A. Christie, K.C., as president of the Ontario Municipal Electric Association, he was appointed as representative of that body on The Hydro-Electric Power Commission of Ontario.





WILLS MACLACHLAN congratulates A. J. Douglas and P. E. Worden after presenting them with C.E.A. replicas and certificates; S. L. Lotimer holds the medal and certificate presented to the whole Preston maintenance department. Included in the group of Hydro men (below) who received certificates are: Arthur Babcock, Roy Babcock and Stewart Babcock, Galt P.U.C., Frank Kreason, Irvine Bricker and Harold Rooke, Preston P.U.C., O. A. Schaefer, E. A. Caldwell and Rudolph Rominger, Preston rural power district.

(Continued from page 12)

brought back, but that for each delayed minute the figures took a sharp curve down.

The C.E.A. medal was received by J. S. Lotimer of the H.E.P.C. on behalf of those who performed resuscitation. A. J. Douglas, foreman, and P. E. Worden of the Preston station maintenance crew received replicas and certificates while certificates went to J. E. Teckoe, manager, Arthur Babcock, Roy Babcock and Stewart Babcock, Galt P.U.C., Frank Kreason, Irvine Bricker and Harold Rooke, Preston P.U.C., and O. A. Schaefer, E. A. Caldwell and Rudolph Rominger, Preston R.P.D.

It was pointed out that all recipients of Canadian Electric Association Resuscitation Medals have in their possession copper which was used in the construction of the original 17½-mile stretch of power line between St. Narcisse and Three Rivers in the winter of 1896-97. This copper is now stored in ingot form and is used exclusively for making these C.E.A. medals.

After the awards had been made the evening ended with the showing of a film which portrayed the all-important role which Hydro is playing in home, factory and office and on the farm.

SEES LOAD AS INDICATION CONVERSION GOING AHEAD

Dr. Thomas H. Hogg and W. Ross Strike
Address District No. 6, O.M.E.A.
Convention At Kitchener

THAT conversion to peace-time production is going ahead is indicated by the fact that there has been no drop in the Southern Ontario power load since either V.E. or V.J. Day.

This observation was made by Dr. Thomas H. Hogg, chairman of The Hydro-Electric Power Commission of Ontario, at Kitchener, where he addressed delegates to District No. 6 O.M.E.A. convention on September 27.

He also assured the delegates that the Commission was making every effort to fill the 14,000 applications for rural service within the next two years. At the same time, Dr. Hogg remarked that too many farmers were using too few kilowatt-hours and declared: "Nothing the farmer can buy will give him so profitable a return on his investment as Hydro."

At the same session, W. Ross Strike, president of the O.M.E.A. and a Hydro Commissioner, urged the delegates to bring their problems to his attention, and sug-

gested that O.M.E.A. members canvass their municipalities with a view to ascertaining the number of linemen required in the future.

He explained that the linemen's training school was receiving applications, and should a district sponsor a man of its choosing, that man would be trained and returned to work in his own area.

Mr. Strike pointed out that since the average line-man was 50 years old, a system of limiting the "spike-boys" in accordance with their age was a problem that could well come under discussion at various meetings.

Announcing the big O.M.E.A. convention in Toronto, the first week in March, Mr. Strike assured his audience that adequate accommodation would be provided in two hotels.

Inclusion of managers, engineers and executive officers as members of the O.M.E.A. was endorsed by the meeting upon recommendation of the executive committee.



CLOSE HARMONY in a community sing-song is not always attained. However, T. H. Dobson of St. Marys seems to be doing very well judging from the co-operation of his chorists.



HENRY HITZROTH of Tavistock registers for the meeting while Mildred Kaufman of Kitchener Public Utilities Commission and Ray Pfaff of St. Marys make out name tags.



MEETING FOR a special session (top) to "iron-out" problems in their work, the engineers, managers and officials delayed business at District No. 6 O.M.E.A. convention long enough for Hydro News to get a picture. Front row: left to right: Ray Pfaff of Kitchener; Mildred Kaufman who dropped in to help by taking notes; Art Bromley, Kitchener; Ted Teckoe, Galt; and Howard Snyder, Bridgeport. Back row: left to right: Cecil Barbour, Wellesley; W. J. Bishop, Guelph; Eby Rush, Waterloo; H. A. Howard, Brantford; Subramania Swayambu, of India, an interested guest; W. McLeod, Hespeler; A. B. Manson, Stratford; R. G. English, New Hamburg; S. A. Quader, also from India, and E. A. Roth, Tavistock.

WHILE CHATTING on the lawn (bottom) before dinner at the Grand River Golf and Country Club, the camera man persuaded the group to "watch the birdie." From left to right they are: M. McLeod, Hespeler; J. E. Teckoe, Galt; H. A. Howard, Brantford; Henry Hittzroth, Tavistock; Frank Fooke, Tavistock; W. P. Kress, Waterloo; A. E. MacIntyre, Stratford; A. B. Manson, Stratford; G. C. Parker, H.E.P.C.; Andrew Kaufman, Tavistock, and William Henderson, Waterloo.

In keeping with a precedent set by other districts, the by-law dealing with the number of directors was amended to authorize five instead of three.

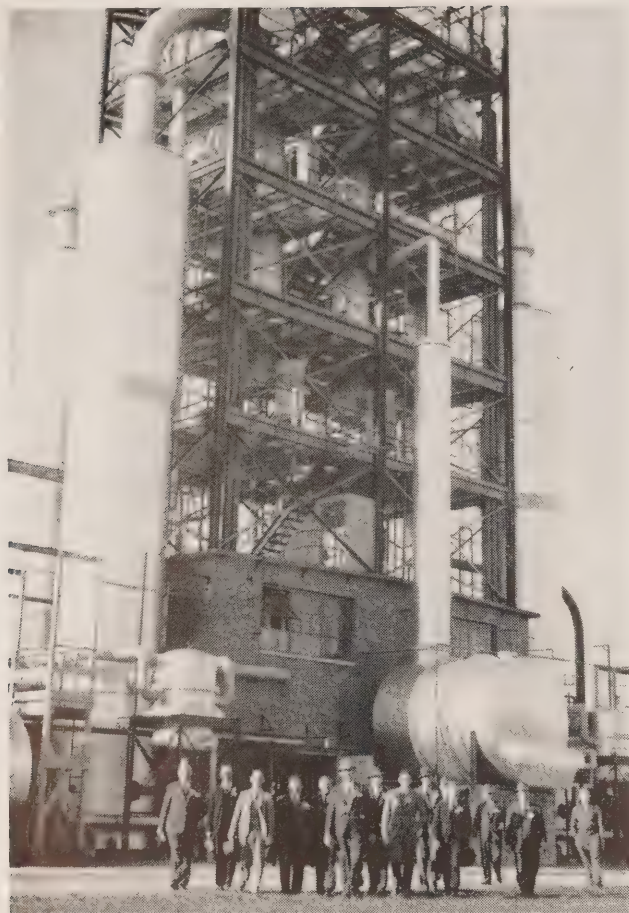
During the evening session at Grand River Golf and Country Club, Chester Merner, a commissioner from New Hamburg, presided at the dinner and the entertainment which followed.

Mr. Merner welcomed Syed A. Quader, a young engineer from India who is at present with the Commission. The latter, in turn, introduced his companion, Subramania Swayambu, who is also studying administrative and commercial aspects of Hydro in Ontario and who was the guest speaker of the evening. Mr. Swayambu described economic conditions in his native land, and outlined plans for industrializing the country. This would

entail a sound programme of irrigation and power generation, he said.

Tavistock and New Hamburg played hosts to some 34 municipalities registered for the meeting.

During the business session, M. J. McHenry, director of promotion; Wills MacLachlan, head of the Commission's employee relations department; and R. T. Jeffery, chief engineer in charge of municipal affairs, answered questions from the floor. The following officers of O.M.E.A. district No. 6 were elected for the ensuing year: president, G. W. Gordon, Kitchener; vice-president, H. O. Hawke, Galt; directors: W. P. Kress, Waterloo; Wilfred Corp, Tavistock; F. E. Welker, St. Jacobs; David E. Kennedy, Guelph; and A. E. MacIntyre, Stratford. The past president is F. H. May of St. Marys.



DELEGATES ON tour of the Polymer Corporation at Sarnia had a busy day. This shot was taken when some of the visitors were walking from one building to another.

MARCHING ALONG

(Continued from page 4)

145 new members, including 5 ladies, were present to receive buttons and certificates.

Since the last annual dinner, six members have passed away. Their names are: George Austen, operating, Walkerville; C. C. Bodley, service and production, Clarkson; R. M. Bond, municipal auditing, Toronto; A. L. Hiscocks, operating, Woodstock; Alfred E. Nielson, operating, Niagara Falls; George A. Saunders, electrical engineering, Toronto.

B. O. Salter, past president of the club, called upon the members to stand in silent tribute to the memory of their former colleagues.

A. H. Hull, the Commission's electrical engineer and president of the Hydro Quarter Century Club, who presided, extended a cordial welcome to the large gathering and paid tribute to his associates on the club executive for their fine co-operation during the past year.

Memories of the original survey made for Hydro

THAT "CERTAIN SOMETHING"

ALWAYS a bright feature of the Ontario Hydro Quarter Century Club's annual banquet is the presence of the lady members, who now total 42. Of this number, 21 were in attendance at the dinner this year and they undoubtedly added that "certain something" to the event.

New lady members at the banquet who received their certificates and gold buttons this year are: Mildred M. Holtby, Etta E. Johnson, E. B. McKenzie, and Vivian Williamson, all members of the Commission head office staff, and Mrs. Mary J. Russell who retired recently.

between Niagara Falls, Hamilton, London and Toronto in 1907 were brought to mind by George T. Brown, a past president of the club, who said that several members of that survey party were present at the banquet. At this point, he mentioned the names of Dr. Thomas H. Hogg, chairman of the Commission, who conducted the survey between Niagara Falls and Hamilton for J. H. Jackson of Niagara Falls; Walter Jackson, who was on the same party as Dr. Hogg; Bob Roberts, working for Messrs. Fairchild of Brantford; S. W. Johnston, working for F. W. Farncombe of London, and William L. Ainlay, working for Middlemiss and Hartwick of Toronto.

It is interesting to note that A. H. McBride, who has the longest record of service with Hydro (forty years next October) and who was present at the banquet, plotted these surveys at Niagara Falls.

Mr. Brown also recalled that W. G. Webster, chief commissioner of the Ontario Liquor Control Board, was a member of that original survey party.

A resolution expressing appreciation to the Commission for the consideration shown to the club during the past year, and especially in connection with matters pertaining to the welfare of personnel, was passed during the evening.

Attending the banquet, "not as chairman of the Commission but as a member of the Quarter Century Club", Dr. Thomas H. Hogg said that he felt the club served a very fine purpose and that the Commission had no hesitation in extending assistance when they could.

A warm handshake and a word of congratulation were extended to each new member of the club by the Hydro chairman who presented the certificates.

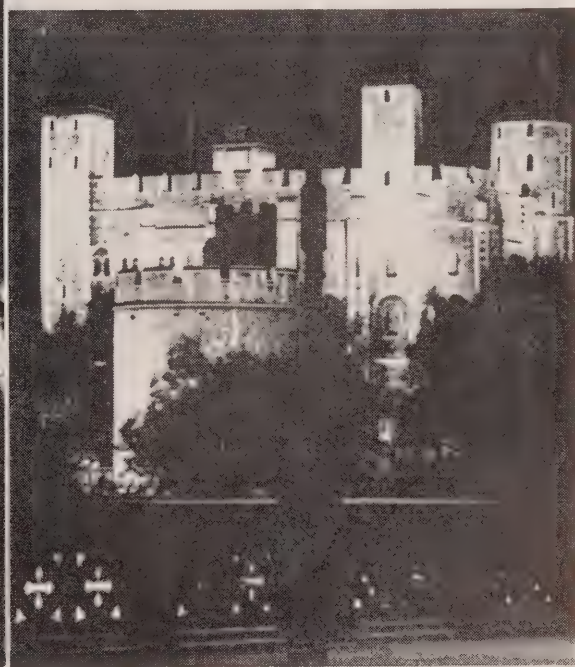
Officers elected for the ensuing year are: president, J. H. Caster; vice-president, T. McFadyen; secretary, S. L. Eisenhofer; treasurer, G. D. Cumming.

Following the draw for lucky number prizes, the evening's programme was climaxed by enjoyable entertainment and the showing of a Hydro movie.



LIGHTS OF LONDON

"When The Lights of London Go On Again"—sang the whole English-speaking world during the dark war years. Somehow London lights became the symbol of the normal and peaceful life free people were fighting for. Here are two of London's most beloved landmarks flooded with festive lights for V-Day celebrations. St. Paul's rises serene and vast above the destruction of the Old City, and the Tower of London still stands firm on the banks of the Thames.



W. ROSS STRIKE, chairman of the O.M.E.A. and H.E.P.C. commissioner, was mulling over a question that Keith MacLeod, chairman of Stamford Township Public Utilities Commission, had asked him when the cameraman got this shot.

STUART EDWARD PRESTON, who succeeds the late Oscar Thal as manager of the Kitchener Public Utilities Commission, was born on August 7, 1907, in Toronto where he attended school and graduated from Malvern Collegiate.

He became identified with the municipal auditing department of The Hydro-Electric Power Commission of Ontario in 1923. In October, 1941, Mr. Preston went to Kitchener to take over the duties of comptroller of the P.U.C., and in February, 1944, when the late Mr. Thal was ill, he was appointed acting manager, a position he held until October 4 of this year when he became manager.



When he has the time, Mr. Preston enjoys a game of golf and likes to cast a line.



Lighter Lines



"I nearly lost my ball in there yesterday!"

The Canadian government is sending another party to the Arctic to test man's resistance and his psychological reactions to the rigours of the climate. A previous expedition with the same objectives was called the "Polar Bear", and this one will be known as the "Muskox". The experience many of us underwent in Ontario this year during our summer vacations might perhaps be officially recognized under the designation "Rain-deer."

* * *

A young man who had just got a job demonstrating neck-ties is said to have walked ten city blocks in search of a suitable shirt to replace the threadbare article he was wearing. Returning home empty-handed, he composed this mournful ditty:—

I can't buy a brier, but I'll do with a corn-cob.

For pyjamas I've night-gowns my grand-daddy wore.

But now it's "no shirts", and I've lined up a good job.

Sellin' neck-ties. Oh, damn it, who wouldn't feel sore!

"To what do you attribute such excellent health at your advanced age?" the reporter asked the nonagenarian in one of his paper's famous "Backyard" interviews.

"To an open-air life," was the ancient's quick response.

"Ah, I see. You've spent most of your life in the country."

"No, I've always been a city man, mister. You see, when I got married, the missus promised never to argue. If, owing to human failings, she forgot herself occasionally, I promised, for my part, that I would never return an angry answer but just take a turn in the garden until I cooled off. Well, I've been living out here most of the time during the past 65 years."

* * *

When the late Shah of Persia was visiting England, he is said to have refused an invitation to the Newmarket races on the grounds that he was already well aware that some horses could run faster than others. Many of us have acquired the same knowledge as the Shah, but we still keep right on going.

* * *



"Naw—I don't play hockey—bridge!"

Many travellers by air have already taken early breakfast in London and late dinner in New York. With jet-propelled stratosphere planes the time of the trans-Atlantic crossing will be still further reduced. And when we get to rockets—ah, those will be the days! It is confidently expected that the traveller will be able to enjoy the different courses of his dinner in cities thousands of miles apart.

I take my grape-fruit in Miami
And London's right for turtle soup.
For lobster, back to Uncle Sammy—
It's just a moment on the "loop."

In Gay Paree it's filet mignon.
Then back again for pumpkin pie.
I sip my wine in far Avignon—
An then, for coffee, back I fly.

* * *

"My advice to you," said the golf instructor, "is to practise your swing for a while without using the ball."
"Without using the ball!" cried the exasperated novice. "Why I've been swinging all morning, and I haven't touched the ball once."

DOWNWORDS PUZZLE

LAST MONTH'S SOLUTION

1	2	3	4	5	6	7	8	9	10	11	12	13	14
O	G	O	K	I	D	I	V	E	R	S	I	O	N
S	R	R	A	R	O	N	I	S	H	E	N	R	O
T	E	C	M	R	W	D	C	Q	O	C	T	N	R
R	E	H	I	E	N	I	T	U	D	R	E	I	M
I	N	I	N	S	I	A	O	I	E	E	R	T	A
C	W	D	I	P	N	N	R	M	S	T	N	H	L
H	O	O	S	O	C	S	I	A	S	A	O	S	
P	O	M	T	N	S	U	A	U	C	R	T	L	C
L	D	A	I	S	T	M	C	X	H	Y	I	O	H
U	T	N	Q	I	R	M	R	P	O	B	O	O	O
M	R	I	U	B	E	E	O	I	L	I	N	I	O
E	E	A	I	L	E	R	S	E	A	R	A	S	L
S	E	C	A	E	T	S	S	S	R	D	L	T	S

#his and #hat

BY THE EDITOR

A LITTLE more than 35 looking days until Christmas!

That will be about all the time that will be left when this issue of Hydro News rolls off the press. We have been advised that goods

will be in very short

SOLVES supply this Christmas
GIFT and that many people

PROBLEM have already solved the gift problem by buying

Victory Bonds and a few cards. Sounds like a good idea, especially at this time when Canada is occupied with vital problems associated with the rehabilitation of service personnel and the control of inflation.

* * *

One of the most unusual stories we have heard in a long time concerns the adventures or misadventures of a lady and a Thanksgiving chicken. It appears that a young woman who resides at

**CHICKEN-
HEARTED
LADY!**

London, Ontario, received the gift of a live chicken from a farmer friend. The bird was

taken home in the lady's car and next came the problem of killing the Thanksgiving dinner. Protesting very loudly, it was taken to scene of execution—the basement. After taking the axe in her hand, the lady became very chicken-hearted and couldn't go through with the job. Not having had much experience in this type of work, she felt that the bird could be removed from this world by a kindlier method and so she went to work and administered what she thought was an effective dose of anaesthetic. Believing the bird to be dead, she set about the task of defeathering and, finally, placed the chicken in the refrigerator. Next morn-

ing, when she opened the refrigerator, out stepped the Thanksgiving dinner expressing her embarrassment and annoyance quite loudly. The lady gulped and raced from the room and to the home of an obliging friend who rushed back with the necessary tool to finish the job.

* * *

No less than 335 Commission employees in Toronto—260 men and 75 women—were regular blood donors during the war according to figures just released. The clinics

A JOB opened in January 1941
WELL and closed in August of
DONE this year.

Hydro donors who are entitled to wear the twenty-donation gold emblem are E. E. Charters, W. B. Clipsham, J. W. Davidson, J. R. Detwiler, M. C. Hare, W. R. Nimmo, S. A. Perrot, J. F. Porter and I. K. Sitzler.

Those who would have qualified for the coveted award by Christmas or sooner are N. A. Falkner, A. R. Galbraith, F. R. Gregory, C. A. Smith, A. M. Cutt, Ian Maclean, E. G. Tallman, R. H. Whatley and Herb. Giles.

* * *

A pointed and amusing piece in rhyme entitled "Darwin's Mistake", came to our desk the other day. In

**CONCERNING
"DARWIN'S
MISTAKE"**

an effort to discover the name of the author, we checked four different sources but without success. If the author should read this we would like to hear from him or her so that we may give due credit. The piece reads:

THREE monkeys sat on a cocoanut tree,
Discussing things as they're said to be.
Said one to the other, "Now listen you two,

There's a certain rumor that can't be true,
That man descended from our noble race

The very idea is a disgrace
No monkey ever deserted his wife,
Starved her babies and ruined her life,
And you've never known a mother monk

To leave her babies with others to bunk,

Or pass them on from one to another
Till they scarcely know who is their mother.

And another thing you'll never see
A monk build a fence 'round a cocoanut tree.

And let the cocoanuts go to waste,
Forbidding all other monks to taste.
Why, if I'd put a fence round the tree
Starvation would force you to steal from me.

Here's another thing a monk won't do
Go out at night and get on a stew,
Or use a gun or club or knife
To take some other Monkey's life.

Yes, man DESCENDED—the ornery cuss,

But brother, he didn't descend from US."

* * *

Notes on our pad show that we have had many queries in the past few weeks concerning the series of articles on our visit to the North.

Originally, we **NORTH OF THE** had planned to **FIFTIETH** run the first **PARALLEL** article in this series in the November issue but due to the fact that

priority must be given to reports of five conventions and other features this month, we have found it necessary to exercise what is usually regarded as a woman's prerogative. As a result, the first article on "North Of The Fiftieth Parallel", will appear in the December issue.



Hydro HOME FORUM

by *Edithemma Muir*
HOME ECONOMIST

A GOOD sauce, as every French cook knows—and most Canadian cooks do not—can lift a mediocre dish up to a party level and make a good dish into a culinary experience!

Canadians, as a rule, are not “sauce conscious”. The housewife makes meat gravy in her roasting pan but not, perhaps, with much imagination. The usual method is to toss in a little flour, pepper and salt and some water and hope for the best. Or occasionally, a glutinous-looking substance known as cream sauce is poured over a vegetable, or perhaps a tomato sauce is used with an omelette. But with a little practice and ingenuity, sauces can become an important part of your meal-planning and can dress up many a budget meal so that your family will think they are getting something special and new.

The flavour of meat can be varied, for example, if you put a bay leaf in the roasting pan. Or cook an onion with your roast and see how the flavour delicately permeates both the meat and gravy. Another idea is to use either tomato juice or vegetable liquids (left over from cooking vegetables) as liquid for the gravy. One tablespoon prepared horseradish cooked with a pot roast of beef gives an interesting flavour. And you can win praise from any gourmet if you baste your roast lamb with *French dressing.

Since we have to watch our butter carefully these days, sauces can come to the rescue of many a vegetable dish. Learn to make a really good basic cream sauce, which can then be varied in a dozen ways—add grated cheese or chopped hard-cooked eggs or capers and lemon juice or chopped parsley. Try a basic cream sauce with a generous addition of prepared mustard and serve with your boiled fish and see

your family sit up and take notice. Try *mock Hollandaise on cabbage, cauliflower or broccoli—or for a treat cover them with tasty, hot mayonnaise.

A chart showing cooking times for various types of meals is a safety guide for the homemaker. It is also a good idea to buy saucepans and kettles with tight-fitting covers. A thick or heavy utensil is the best for stewing, braising or for large-quantity boiling.

*Recipes will be supplied upon request to the Hydro Home Forum, Hydro News, H.E.P.C., 620 University Avenue, Toronto.

PREVENT FOOD BURNS

There should be no occasion for burned food in the kitchen, especially nowadays with the carefully regulated ranges. There are a few basic rules that may help to prevent such accidents. Always remember what time you put anything on to cook and then time it correctly according to the recipe instructions. After your dish is cooking hard, turn your element to low for the rest of the time. This saves electricity, prevents the evaporation of so much of the liquid and makes burning much less probable.

FIRST AID FOR SCORCHED FOOD

In spite of all precautions, occasionally something will burn. And then fast action is needed. If you know what to do you can often salvage most of the food and make it entirely palatable. At the first suspicious scorching smell, turn the heat down and remove the pot from the fire. Reach for a clean pot and put the food that hasn't stuck to the bottom in it. Be careful not to stir the scorched part around or the burnt taste will go through all the

food. And put the scorched pan to soak! Then you can decide how to camouflage the salvaged remainder. If it is potatoes, add more water and continue cooking. When they are done, cream them. If they taste scorched, add a little grated cheese or pimento. If they are too badly scorched for creaming, toss them into hot baking fat, brown quickly and sprinkle generously with salt and pepper.

If you burn an omelet or scrambled eggs, add a dash of Worcestershire sauce or catsup to hide the taste. Or turn your eggs into a Spanish omelet and serve them with a sauce of tomatoes and diced onions, and your family will never suspect what has happened.

A burnt dish with milk in it is more difficult to save. The only thing you can do with a scorched custard or cornstarch pudding is to add a strong flavour. Try chocolate or some caramelized sugar. Or try lemon extract or a little grated lemon or orange peel.

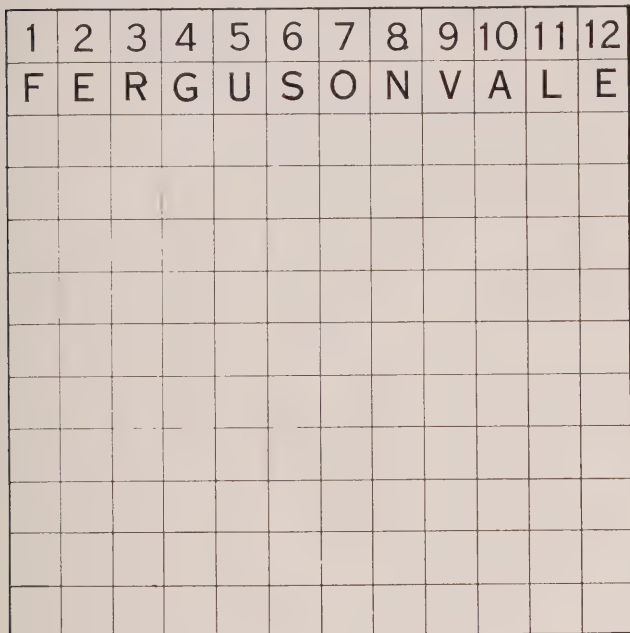
But do please remember to cook your custard dishes always over a very low heat or in a double boiler and then there should be very little chance of such casualties.

Often cake tins that are too thin on the bottom result in burned cakes. One way to prevent this is to invert a pan in the oven to raise your cake tin away from the bottom element.

Keep your broiled meats from having a smoky flavour by leaving the oven door ajar.

If muffin or cake batter starts to boil over, slide a shallow pan of water in the bottom of the oven to catch the drops of batter and so keep them from burning and saturating the oven with a bad, scorched smell.

There are many ways in which food can be saved and these days it is doubly important to study such matters.



“NOW,” chuckled Professor Perplexus, tilting back his mortarboard to reveal the full expanse of his noble brow, “we’ve all had our vacations, and whether it be in college halls, in factory, in office or in field, we should all be ready for a good “spell” of work—that is if we’re going to go anywhere in this bright young land of opportunity. So, this month, I’m going to tune my “Downwords” puzzle to the tempo of our general activities. In places it may not be quite as easy as some which have gone before. But remember, the greatest zest to life is the thrill of overcoming difficulties. Let’s start at Fergusonvale, a station that is going to figure prominently in the transfer of power loads between divisions of the great Hydro system.”

DEFINITIONS

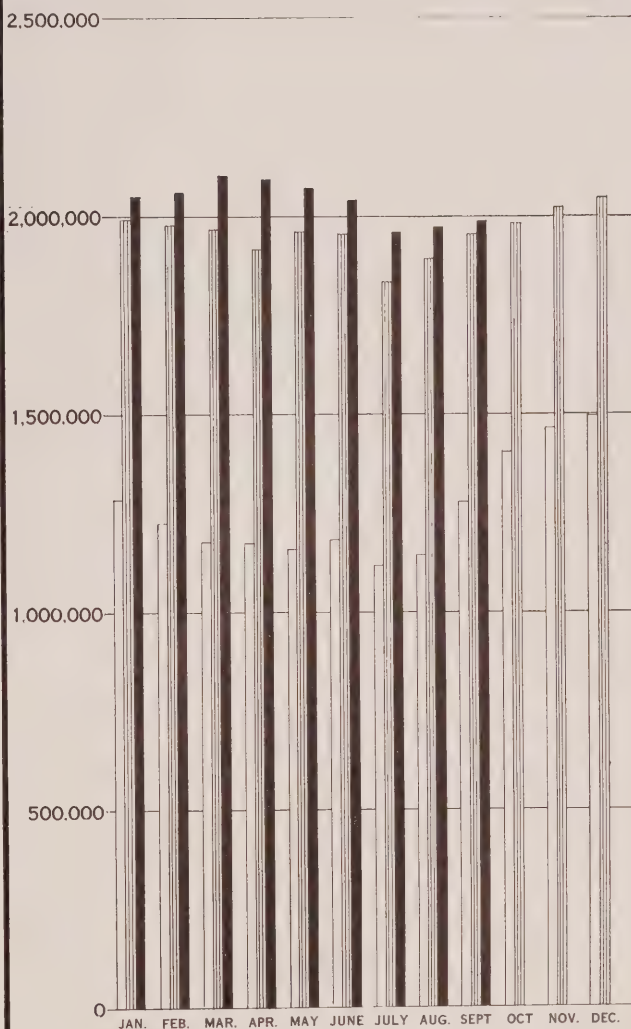
- | | |
|-------------------------------------------------------------|---------------------------------------------------------------|
| 1. They are not bothered by land-lords. | back in dem days foh' de civil wah. |
| 2. One of the names given to Lincoln. | 7. The eclipse of a star. |
| 3. Put food in a box and cool it with Hydro. | 8. An erudite collector of coins. |
| 4. Name given to Napoleon's army (French). | 9. What we all should subscribe to. |
| 5. Sooner or later they'll get us all. | 10. One of the wives of Henry the Eighth who escaped the axe. |
| 6. Yes, sah. He shu' was keepah of a concentration camp way | 11. This party wore the red rose in the Wars of the Roses. |
| | 12. Eternal. |

SOUTHERN ONTARIO SYSTEM

EMBRACING NIAGARA, GEORGIAN BAY AND EASTERN ONTARIO DIVISIONS

PRIMARY LOAD

HORSEPOWER



PRIMARY LOADS

AREA SERVED BY	MAXIMUM 20-MINUTE PEAK H.P.		PER CENT INCREASE
	SEPTEMBER, 1945	SEPTEMBER, 1944	
SOUTHERN ONTARIO SYSTEM	1,990,202	1,952,122	+ 2.0
THUNDER BAY SYSTEM	120,643	116,756	+ 3.3
NORTHERN ONTARIO PROPERTIES	211,539	187,285	+ 13.0
TOTAL	2,322,384	2,256,163	+ 2.9

PRIMARY AND SECONDARY LOADS

SOUTHERN ONTARIO SYSTEM.	2,100,779	2,059,160	+ 2.0
THUNDER BAY SYSTEM	126,139	123,995	+ 1.7
NORTHERN ONTARIO PROPERTIES	274,944	244,380	+ 12.5
TOTAL	2,501,862	2,427,535	+ 3.1

MUNICIPAL LOADS, JULY, 1945

SOUTHERN ONTARIO SYSTEM

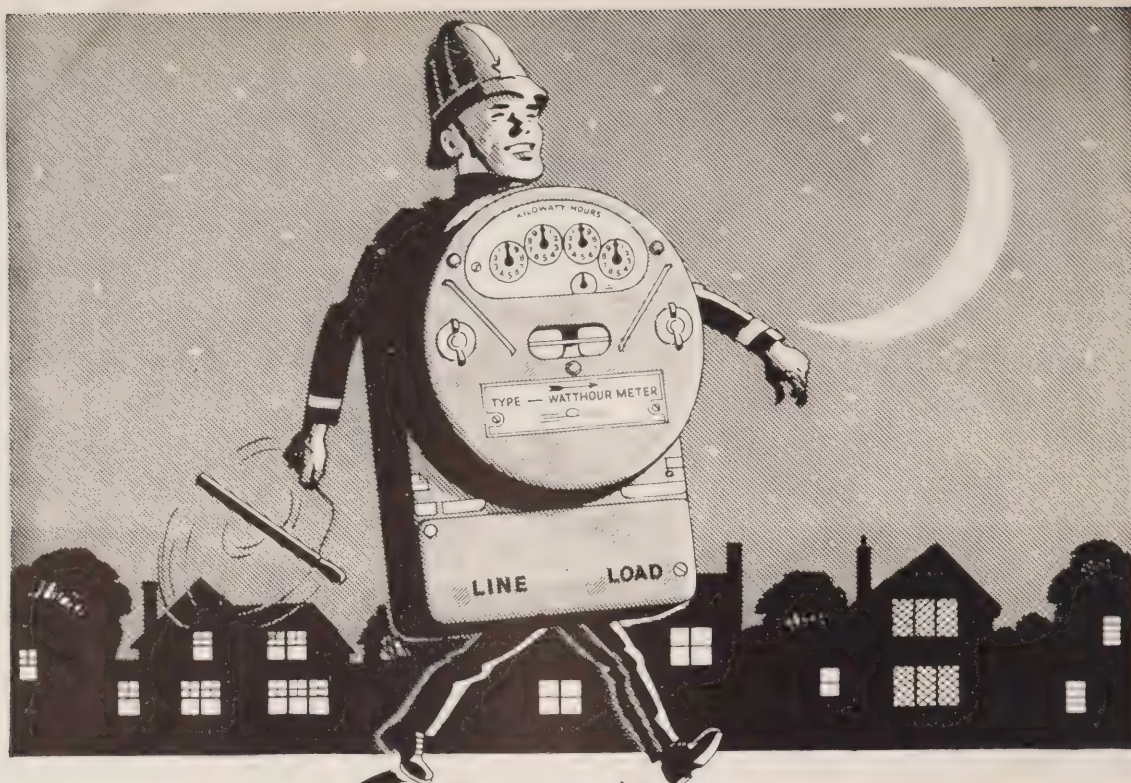
NIAGARA DIVISION

(25-Cycle)

	H.P.	Popula- tion		H.P.	Popula- tion		H.P.	Popula- tion
Acton	1,710	1,903	Erie Beach	51	21	Palmerston	677	1,400
Agincourt	244	P.V.	Essex	624	1,886	Paris	1,974	4,604
Ailsa Craig	170	487	Etobicoke	7,345	V.A.	Parkhill	280	1,029
Alvinston	110	649	Exeter	884	1,654	Petrolia	943	2,768
Amherstburg	1,073	2,704	Fergus	1,422	2,759	Plattsville	166	P.V.
Ancaster Twp.	441	V.A.	Fonthill	153	860	Point Edward	1,725	1,199
Arkona	62	403	Forest	679	1,562	Port Colborne	1,571	6,928
Aurora	1,566	2,821	Forest Hill	4,348	12,172	Port Credit	881	1,934
Aylmer	1,076	1,985	Galt	10,873	15,126	Port Dalhousie	1,267	1,599
Ayr	276	760	Georgetown	2,116	2,452	Port Dover	703	1,790
Baden	636	P.V.	Glencoe	209	763	Port Rowan	112	700
Beachville	811	P.V.	Goderich	1,821	4,674	Port Stanley	1,406	824
Beamsville	520	1,227	Granton	66	P.V.	Preston	4,144	6,656
Belle River	216	1,200	Grimsby	946	1,988	Princeton	149	P.V.
Blenheim	535	1,873	Guelph	11,296	23,074	Queenston	142	P.V.
Blyth	174	662	Hagersville	1,182	1,524	Richmond Hill	509	1,295
Bolton	248	629	Hamilton	148,237	164,719	Ridgetown	534	1,986
Bothwell	124	683	Harriston	544	1,292	Riverside	1,238	5,235
Brampton	3,175	6,157	Harrow	609	1,092	Rockwood	158	P.V.
Brantford	21,428	31,622	Hensall	177	686	Rodney	138	758
Brantford Twp.	1,325	V.A.	Hespeler	2,895	2,938	St. Catharines	27,687	34,541
Bridgeport	202	P.V.	Highgate	89	322	St. Clair Beach	134	138
Brigden	96	P.V.	Humberstone	550	2,831	St. George	212	P.V.
Brussels	169	784	Ingersoll	3,140	5,757	St. Jacobs	408	P.V.
Burford	306	P.V.	Jarvis	183	513	St. Marys	1,831	4,009
Burgessville	53	P.V.	Kingsville	578	2,453	St. Thomas	7,503	17,045
Burlington	1,557	3,925	Kitchener	26,792	35,465	Sarnia	5,940	18,599
Burlington Beach	563	1,474	Lambeth	117	P.V.	Scarborough Twp.	4,700	V.A.
Caledonia	380	1,430	LaSalle	309	907	Seaforth	1,038	1,782
Campbellville	54	P.V.	Leamington	1,853	6,048	Simcoe	2,961	6,304
Cayuga	125	700	Listowel	1,626	2,984	Smithville	187	P.V.
Chatham	7,125	17,184	London	39,654	81,567	Springfield	78	382
Chippawa	319	1,228	London Twp.	455	V.A.	Stamford Twp.	2,799	8,275
Clifford	119	491	Long Branch	1,289	4,258	Stoney Creek	230	933
Clinton	808	1,879	Lucan	209	643	Stouffville	394	1,198
Comber	149	P.V.	Lynden	124	P.V.	Stratford	7,794	17,163
Cottam	75	P.V.	Markham	431	1,175	Strathroy	1,635	2,834
Courtright	45	355	Merlin	83	P.V.	Streetsville	248	701
Dashwood	132	P.V.	Merritton	11,256	2,916	Sutton	607	949
Delaware	81	P.V.	Milton	1,644	1,915	Swansea	2,467	7,100
Delhi	457	2,430	Milverton	439	994	Tavistock	715	1,080
Dorchester	102	P.V.	Mimico	2,550	8,785	Tecumseh	507	2,391
Drayton	151	528	Mitchell	804	1,670	Thamesford	195	P.V.
Dresden	447	1,525	Moorefield	55	P.V.	Thamesville	208	816
Drumbo	121	P.V.	Mount Brydges	97	P.V.	Theford	147	598
Dublin	66	P.V.	Newbury	35	298	Thorndale	100	P.V.
Dundas	3,144	5,245	New Hamburg	732	1,441	Thorold	3,155	5,284
Dunnville	1,388	3,916	Newmarket	2,125	3,800	Tilbury	1,483	1,923
Dutton	266	830	New Toronto	10,924	9,469	Tillsonburg	1,496	4,602
East York Twp.	7,456	41,578	Niagara Falls	10,564	20,371	Toronto	334,508	657,612
Elmira	1,411	2,069	Niagara-on-the-Lake	1,182	1,764	Toronto Twp.	3,561	V.A.
Elora	508	1,185	North York Twp.	8,647	V.A.	Wallaceburg	4,354	4,802
Embro	159	420	Norwich	447	1,301	Wardsville	46	221
Erieau	288	218	Oil Springs	177	541	Waterdown	284	867
			Otterville	113	P.V.	Waterford	443	1,294
						Waterloo	5,915	8,968
						Watford	459	1,023

MUNICIPAL LOADS, JULY, 1945

	H.P.	Popula- tion		H.P.	Popula- tion		H.P.	Popula- tion
Welland	12,079	14,899	Neustadt	44	43	Kemptville	411	1,230
Wellesley	155	P.V.	Orangeville	844	2,558	Kingston	15,555	29,545
West Lorne	271	768	Owen Sound	6,142	13,559	Lakefield	413	1,301
Weston	4,225	6,234	Paisley	139	530	Lanark	107	686
Wheatley	209	761	Penetanguishene	1,089	4,177	Lancaster	47	570
Windsor	50,985	118,040	Port Carling	366	520	Lindsay	3,926	8,345
Woodbridge	756	1,100	Port Elgin	771	1,415	Madoc	219	1,130
Woodstock	7,887	12,339	Port MacNicoll	84	950	Marmora	160	1,004
Wyoming	101	538	Port Perry	373	1,175	Martintown	50	P.V.
York Twp.	15,181	77,175	Priceville	10	P.V.	Maxville	110	811
Zurich	161	P.V.	Ripley	138	420	Millbrook	139	749
(66 2/3-Cycle)			Rosseau	46	305	Morrisburg	387	1,484
Bronte	181	P.V.	Shelburne	267	1,053	Napanee	1,538	3,241
Oakville	1,454	4,243	Southampton	779	1,467	Newcastle	235	701
Trafalgar Twp.	493	V.A.	Stayner	331	1,106	Norwood	184	710
GEORGIAN BAY DIVISION			Sunderland	96	P.V.	Omeme	195	630
(60-Cycle)			Tara	144	510	Orono	86	P.V.
Alliston	501	1,700	Teeswater	188	973	Oshawa	16,730	26,610
Arthur	173	1,089	Thornton	27	P.V.	Ottawa	33,651	150,816
Bala	411	355	Tottenham	130	532	Perth	1,798	4,187
Barrie	4,406	9,599	Uxbridge	444	1,480	Peterborough	15,305	24,977
Beaverton	389	941	Victoria Harbour	128	979	Pictou	1,490	3,400
Beeton	92	617	Walkerton	1,115	2,534	Port Hope	2,950	4,997
Bradford	299	1,041	Waubaushe	181	P.V.	Prescott	1,691	3,318
Brechin	55	P.V.	Warton	464	1,750	Renfrew	182	5,673
Cannington	248	761	Windermere	104	117	Richmond	75	428
Chatsworth	95	333	Wingham	936	2,149	Russell	89	P.V.
Chesley	653	1,812	Woodville	74	439	Smiths Falls	3,089	7,741
Coldwater	221	545	EASTERN ONTARIO DIVISION			Stirling	352	947
Collingwood	2,924	6,249	(60-Cycle)			Trenton	5,713	8,183
Cookstown	107	P.V.	Alexandria	324	1,976	Tweed	362	1,181
Creemore	164	661	Apple Hill	54	P.V.	Warkworth	91	P.V.
Dundalk	274	686	Arnprior	1,405	4,019	Wellington	362	948
Durham	506	1,874	Athens	129	626	Westport	127	725
Elmvale	185	P.V.	Bath	56	325	Whitby	1,569	4,236
Elmwood	75	P.V.	Belleville	7,733	15,498	Williamsburg	122	P.V.
Flesherton	86	452	Bloomfield	183	636	Winchester	422	1,017
Grand Valley	211	645	Bowmanville	2,847	3,850	THUNDER BAY SYSTEM		
Gravenhurst	1,357	2,261	Brighton	530	1,462	(60-Cycle)		
Hanover	1,606	3,190	Brockville	5,250	11,112	Fort William	13,940	30,370
Holstein	21	P.V.	Cardinal	434	1,602	Nipigon Twp.	221	V.A.
Huntsville	1,214	2,943	Carleton Place	2,006	4,143	Port Arthur	25,380	24,217
Kincardine	900	2,483	Chesterville	324	1,094	NORTHERN ONTARIO		
Kirkfield	27	P.V.	Cobden	125	643	PROPERTIES		
Lucknow	356	856	Cobourg	2,437	5,907	Nipissing District		
MacTier	124	V.A.	Colborne	228	960	(60-Cycle)		
Markdale	185	776	Deseronto	297	1,002	North Bay	4,916	16,013
Meaford	910	2,759	Finch	112	396	Patricia District		
Midland	4,611	6,754	Frankford	192	1,095	(60-Cycle)		
Mildmay	187	764	Hastings	172	823	Sioux Lookout	300	1,967
Mount Forest	629	1,936	Havelock	174	1,103	Sudbury District		
			Iroquois	331	1,123	(60-Cycle)		
						Capreol	268	1,660
						Sudbury	9,351	36,724



THE *Electric* METER Is for Your Protection

EVEN though your Hydro makes electricity available to you in Ontario at a very low cost, it is important that you pay only for the amount of power that you actually use. The electric meter on duty in your home, is your protection against paying for more than you consume.

Every one of some 800,000 meters in Ontario is tested and certified by a Dominion Government inspector at regular intervals to assure complete accuracy. Electric meters are among the finest of jewelled precision instruments . . . as constantly true as the finest watch.

For your protection, Hydro installs a separate meter, exclusively for your own

household. Having a meter of your own is the only possible way to be sure that you only pay for the electricity which you use. Imagine buying food from a merchant who weighs several people's orders at the same time, and splits the cost evenly regardless of the size of the orders! You want your order weighed individually when you buy food. When you use electricity your meter assures accurate individual measurement.

Low cost Hydro service in Ontario offers amazing comforts and conveniences. For your protection . . . so that you will pay for only the amount of Hydro you actually use, a Government Inspected Meter is installed for your own household exclusively.

**THE HYDRO-ELECTRIC
POWER COMMISSION
OF ONTARIO**

HYDRO *News*



"Joy to
The World"

Dad is home again!

Christmas candles will burn brighter this year and Christmas turkeys have a new and special flavour for the thousands of Canadians who will be sitting down to their first Christmas dinner with the family circle complete. And many a childish face will glow in the candlelight because "dad" takes his place at the head of the table again — with his strange tales from Italy, from France, Germany or the Pacific.

But even as the candles are lit and the heaped plates go round, Canadians will pause and remember — remember those family groups that will never be complete—those thousands of desolate and homeless in Europe — that great army of children who have been frightened and hurt and starved by a war not of their making.

Let us therefore make a solemn resolve never again to allow the powers of darkness — greed, selfishness and mistrust — to put out the candles of Christmas, those brave lights that symbolize the warm love and kindness that came into the world two thousand years ago.



THE HYDRO - ELECTRIC POWER COMMISSION OF ONTARIO

Canada's Electrical Future



AN ADDRESS BY DR. THOMAS H. HOGG,
Chairman, The Hydro-Electric Power Commission
Of Ontario, Before The Canadian Electrical
Manufacturers' Association At Niagara
Falls On Wednesday, October 24,
1945.

FOREIGN MARKETS ARE IMPORTANT TO CANADA'S INDUSTRIAL ECONOMY

**Replacing Of Power Equipment Destroyed During The War Will Tax
Productive Capacity Of All Countries Equipped To Supply
Such Equipment, States Dr. Hogg.**

IT WAS with some apprehension that I accepted your President's invitation to be your guest speaker here tonight, but after reading the booklets setting out the organization, constitution and objects of the Canadian Electrical Manufacturers' Association, I felt a bit more reconciled to the task.

It is my feeling that Canadian Electrical Manufacturers are making a decided forward step in developing a form of co-operation which, if followed through on a genuine basis of service to the public, should result in better values for the consumer in the field of electrical equipment and appliances.

Let me repeat three of the "Objects" set out in your constitution:

(a) To increase the amount and improve the quality of electrical service to the public;

(b) To promote the standardization of electrical products;

(c) To promote a spirit of co-operation among the members of the Association in the attainment of improved production, enlarged distribution and increased efficiency of the use of electrical products.

If these words mean to the industry what they mean to me, there is no doubt that the consumer, whether in the factory or in the home, should get greater values and lower prices for many of the electrical products that will be coming back onto the market in the very near future. Such a policy will inevitably work to the mutual benefit of both the consumer and the manufacturer because it will increase production and lower costs.

Co-operation In War And Peace

During the past five years, the Allied Nations have shown in very tangible form what outstanding results can be obtained in producing instruments and materials of war by co-operation and team-play—brought about, to a great extent (I regret to say) by the fear of being enslaved or destroyed by a ruthless enemy. How much of this spirit of co-operation and team-play can be carried into our post-war life? Much of the speed and success of our post-war recovery hinges on these two vital factors.

Our post-war problems demand adherence to these two factors equal to, or greater than, that shown during the war period, if this world is going to pull through with anything resembling a whole skin. The pre-war atmosphere of tariffs, trade restrictions, cartels, etc., will not sustain life in the new ordeal ahead of us. Similarly, unreasonable

bureaucratic controls should not be allowed to interfere with trade channels in the post-war era.

During the past two years I have had an opportunity, while acting as Canadian Representative on the Public Utilities Committee of the Combined Production and Resources Board at Washington, D.C., to get a broad picture of some of the post-war problems facing the devastated countries of the West and the East, and I have also had some interesting and informative talks in my office during the past year with many of the leading industrialists and engineers from China, India and South America. From these sources I have invariably found a keen interest in Canada as a source of engineering information and advice on hydro-electrical equipment. These visitors have all expressed themselves as liking our Canadian way of doing business and their surprise at the extent of our industrial development.

Canada's Contribution In World Affairs

One of the Chinese industrialists who recently visited us expressed it this way: "The British are too conservative; the Americans are too aggressive; but the Canadians seem to have developed a happy medium between these two extremes that appeals to the Chinese business men of today."

In my opinion, Canada, if she wishes, can play an important part on the world stage by contributing her skill attained in hydro-electric generation to many foreign countries as well as other parts of the British Empire. We lead in experience and we have the industrial capacity to produce equipment here.

Countries like India and China, where little industrial progress has been made to date, have now awakened to the advantages of low-cost power and its necessity in their internal economy. They, too, realize the truth of the formula: Wealth per capita equals horsepower per capita.

The demand for power equipment to replace that destroyed by war, and the additional equipment required to carry out plant developments in the post-war period, is bound to tax the industrial productive capacity of all countries now organized and equipped to supply equipment and materials in such demand. With this picture in front of us, why should not Canada play her part as she has done in the war economy? Canada can compete in world markets in hydro-electric equipment if the Canadian electrical manufacturers so desire, and such participation in foreign markets will supply an outlet for machinery and goods that is bound to have a beneficial stabilizing effect on Canada's industrial economy for the post-war period of the next five to ten years.

I am quite sure that Canada's electrical future will totally eclipse its very successful past.

With proper planning (this is the function which I assume this Association has been organized to perform) participation in export trade, to an amount that will give a proper balance in the over-all Canadian manufacturing economy, should help rather than hinder Canada's own domestic development.

Some of you may be asking why I am so concerned with foreign export trade for Canada. *It is simply because I feel that the Dominion and Provincial industrial economies are bound to be affected from this source, as well as from our domestic trade, and that Canada must share its responsibilities in the export of manufactured goods, as well as in the export of agricultural products.*

Ontario's Power Problems

I will now come a little closer home and discuss some of our local problems, which no doubt are of immediate interest to those assembled here. During the past five years, covering the entire war period, The Hydro-Electric Power Commission has been able to meet all the wartime power demands from industry, and I do not know of a single instance where any war plant or war production has been delayed a single day due to want of electric power. The Commission has co-operated with the Dominion Government, not only in the conservation of the use of power itself for non-essential purposes, but also in curtailing new generation and heavy maintenance, with the object of conserving labour and materials so that they could be used for essential war purposes.

One might think that after V-E and V-J Days the power load on the Commission's system would decrease, but such has not been the case. Our primary loads and our total loads are still greater than they were for the same period last year.

In order that extensions and rehabilitations may be made in an orderly manner to dovetail into a master plan, the planning engineers of the Commission have been studying various possibilities of load growth that may develop throughout Ontario in the next 10 or 15 years, and determining the best sequence of power developments and arrangement of transmission and other facilities to meet the growing needs. It is, of course, not possible to foresee all contingencies, but it is possible to determine the governing engineering principles and make a long-term plan—flexible as to details but orderly in its main framework.

The Commission's post-war programme includes not only new generation but many new transmission lines, primary and secondary sub-stations, as well as a large backlog of heavy maintenance that it is essential to proceed with at the earliest possible date in order to put the equipment back in first-class operating condition to maintain the standard of service required from the Commission.

The Commission, jointly with the Ontario Government, has set out a five-year programme for rural distribution, the details of which have been set forth in a pamphlet issued recently, in which not only a complete analysis is found of the number of customers but also some idea is given of the types and amounts of equipment and appliances that should be required by the new customers who will be served by this plan.

In Northern Ontario, mining, chemical and industrial loads are all showing a healthy increase, and it seems quite apparent that additional developments in the North will have to be proceeded with in the very near future. One new unit of 19,000 horsepower capacity has just been put into service at the Commission's Alexander Falls plant, which serves the Thunder Bay district. This unit completes the capacity for which this station was designed and the entire amount of this capacity has already been spoken for. Contracts have been let during the past month for hydraulic and electric equipment for a second 70,000 horsepower unit at DeCew Falls. This unit will provide increased peak load capacity for the Niagara system, and is planned to go into operation in September, 1947.

In order to enable the Commission to operate the Southern Ontario, Eastern Ontario and Georgian Bay systems with the greatest over-all economy as to the use of water, an additional 25,000 kva. frequency-changer is being installed just outside Toronto at Scarborough. This new frequency-changer will be tied in to all three systems and will permit the flow of kilowatt hours from the 25-cycle Southern Ontario system into the 60-cycle Eastern Ontario and Georgian Bay systems when it is desirable to conserve storage. Peak power to help the Southern Ontario system can likewise be obtained by the reverse process of bringing 60-cycle power from the Eastern or Georgian Bay systems when storage of water is available.

The Frequency Problem

Now I would like to turn for a few moments to the important question of frequency.

In recent weeks, as you know, there has been much discussion about this matter in the daily press. Suddenly there has developed a question in the minds of many as to why the Niagara Division of the Southern Ontario System is 25 cycles—like an island in the middle of a continental area where 60 cycles has become the standard frequency. The reason for this sudden interest by the public has been attributed to various causes, such as the problem involved in the operation of fluorescent lighting, television and F.M. broadcasting. Some of the discussion has indicated that Ontario has lagged behind others in not distributing 60 cycles universally.

Let us examine the situation.

Sixty cycles in recent years has become established as the standard frequency on this continent. In Europe, the standard frequency adopted is 50 cycles. Hydro in Ontario distributes 60 cycles in Eastern Ontario, in the Georgian Bay and Thunder Bay areas and in parts of Northern Ontario. The problem, which we have recognized for many years, is one of effecting the conversion of a major network totalling 1,300,000 kw. of generating capacity, 725,000 kilowatts of which are in Commission-owned plants. The invested capital in this network amounts to about \$200,000,000.

Those engineers among you will remember how 25 cycles was originally chosen for this area in the last century when an international committee considered the problem, and finally how Geo. Westinghouse was prepared to guarantee a machine with a frequency of 25 cycles—a compromise between 30 and 16⅔ cycles. The first plant built was that of the Niagara Falls Power Company across.

the River in 1895, and within ten years 25-cycle plants were undertaken in Canada by the Electrical Development Company, The Ontario Power Company and The Canadian Niagara Power Company.

When Hydro was formed it first bought power in 1910 from these private companies and later acquired two of the plants.

Very soon World War No. I necessitated the immediate construction of Hydro's major development at Queenston. At the time the plant was designed the engineering factors governing the choice of frequency were less pronounced than today and, coupled with the costs involved and the confusion created in adopting a new frequency during wartime, the decision was made to continue at 25 cycles.

We have today, therefore, a major problem facing us which, of necessity, had to be postponed during World War No. II.

The large-scale problem of complete engineering standardization was faced by the United Nations during both World Wars and, unfortunately, it still remains with us. You know something of head-aches created by use of different screw threads—the American and British—and the difficulties encountered in building and maintaining uniform equipment for the different armies, navies and air-forces in the field. It seems a great pity that frequencies of generation cannot achieve world-wide standardization.

I will say this that the 25-cycle area in Ontario got a head start in electrical development and has built up an industrial centre on low-cost power second to none in Canada. You cannot have your cake and eat it too.

Naturally it is not easy for the layman to fully appreciate the many far-reaching technical and economic problems which would be involved, if the Commission were to decide to effect a change-over from 25 to 60 cycles in the Niagara division. It is important that a complete and detailed analysis of all these problems be made before the Commission can arrive at a final decision in this matter.

It is not a change which can be made over night but one which involves the careful planning of a long-term programme carried out over a period of years and necessitating the outlay of many millions of dollars. Bearing these facts in mind, the Commission has to be sure that the majority of Hydro consumers now using 25-cycle current would benefit to an extent which would fully justify the undertaking of such a tremendous programme.

Such a programme involves the construction of a major power development at 60 cycles which would then permit the selection of a certain 25-cycle area to be converted to the higher frequency. Over a period of years, other areas would be successively converted.

An illustration of this particular problem is before us just across the Niagara River in Buffalo, where the Niagara Hudson Company commenced some ten years ago to convert parts of its 25-cycle system to 60 cycles. Today it supplies a load of about 300,000 kw. at 60 cycles, but it still has about 850,000 kw. of 25-cycle load. Some industries, such as steel mills, prefer 25 cycles, and others, such as the electric-chemical plants, can use any frequency, so that it is economic to retain in operation for some time certain 25-cycle plants even after the majority of domestic and commercial services have been changed to 60 cycles.

No Partisans in Engineering

The Commission has from time to time been approached to participate in associations to further the interest of publicly-owned utilities, as a counterpart to associations set up to foster the interests of privately-owned utilities. I see many difficulties in an association of this type because I feel that the public interest cannot be as well taken care of by partisan associations as it can by one whose interest is common.

To my mind, the primary function of a technical association, or a technical journal, is to give broad consideration to technical matters. Engineers are trained in accuracy and logic, and a valuable exchange of experience has been obtained over a period of some forty years between the Commission's engineers and engineers of other organizations, but as soon as anyone interposes partisan differences technical co-operation is more difficult to maintain.

Over the past forty years Hydro in Ontario has been subjected to many attacks and much criticism. Such criticism is not only welcome but valuable, because by having its operations closely scrutinized by public opinion Hydro has over four decades built up a sound organization. It is only when people attack Hydro's constitution, and not its operations, that they find how deep and how well planted are its roots.

It is a pity that so many have forgotten Hydro's past history. This Association in particular should remember how Hydro came into being. It was the pioneer industrialists of this province who, seeking low-cost electricity, first initiated the movement. Later it was found that for a true co-operative enterprise it was necessary for the municipalities to contract for power and become partners, thus protecting the interests of all people. Those fathers of Hydro, and notably Sir Adam Beck, built upon a sound foundation which has resisted even the roughest weather.

Function of Utilities

Another point I would like to mention is that from time to time the Commission has been pressed by municipalities and other consumers to go into the manufacture of certain electrical equipment. The Commission has always been opposed to this because it feels that its function is to develop and distribute power and that the function of the electrical manufacturers is to manufacture and distribute equipment. If the proper co-operation is realized between the utilities and the manufacturers, it would seem obvious that greater value can be received by the public by each party carrying out the function for which it was organized.

I want you to feel that the policy of The Hydro-Electric Power Commission is to co-operate with the manufacturers for one common end, and that is to give the consuming public electric power at the lowest possible cost. *If, therefore, your Association strictly adheres to its constitution it will undoubtedly make a great contribution to the nation's economy.*

Canada's postwar economy is going to be primarily based upon its industrial expansion, which in turn will be largely dependent upon low-cost hydro-electric energy. There is no doubt in my mind as to what the future holds for the Province of Ontario over the next ten years—and I am quite sure that Canada's electrical future will totally eclipse its very successful past.



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The Front Cover



AT this particular Christmas, "Joy To The World" is more than the name of an old, oft-sung carol. It is a prayer that comes from the hearts of all men of goodwill and is, therefore, a fitting title for this year's Christmas cover. Before the window, whose beautiful stained glass reflects the immortal story of the nativity, stand five Toronto choir boys, their voices blended in the singing of familiar Christmas hymns.

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December, 1945

Number 12

CONTENTS

	Page
Christmas Message By Dr. Thomas H. Hogg	2
Page Three	3
North Of The Fiftieth Parallel	4
Woodstock	11
A-Tisket A-Tasket	14
Old Soldiers Never Die	18
\$200 Million Programme	20
Around The Hydro Circuit	21
Over The Top In The Ninth	22
Santa's Here	26
Lighter Lines	28
This And That	29
Hydro Home Forum	30
Day-Zhoah-Shehym!	32
Downwords Puzzle	33
Monthly Load Summary	33
Is There A Santa Claus?	34



Christmas 1945



To all members of the great Hydro family I extend sincere Christmas wishes.

For Canadians this will be the first Christmas in six years without the shadow of war, and there will be gladness around many a Christmas table because of the presence of someone in uniform—home at last.

But the end of the war, as such, has not provided us with the solution to all future difficulties. It will take all our co-operative energy, all the singleness of purpose with which we tackled the war job, to nurture the peace, so dearly bought, and to make it a working reality.

Canada has great days ahead. Let us, as members of a great, publicly owned, democratically planned enterprise, resolve at this time, to take our full share in helping to build a future that will have as its basis, peace and genuine respect for the rights of the common man.

W. S. [Signature]

* Page Three *

Christmas Thoughts

THIS year, for the first time since 1938, Canadians will celebrate a peacetime Christmas. With so many of our troops returned from overseas, family gatherings and re-unions will predominate, and it would not be surprising if the seasonal rejoicings were to strike a quieter note than in wartime years.

Happily, we are no longer engaged in a conflict where our very existence is at stake. The strain endured during these years, whether in labours at home or on the fighting fronts overseas, has been lightened by victory, and our reaction to the great festival may be expected to be less hectic and more in accord with the true spirit and significance of the day. Not that there will not be plenty of the old traditional joy and merry-making as the bells ring out their Christmas message. But this year, the gladness of the season will be tempered by thoughts of the future and of the difficult road humanity has to tread to attain the goal of an enduring peace.

Such thoughts and reflections need not cloud the festivities of Christmas Day. But, as we clasp the hands of old friends and new ones in cheerful greeting, as we listen to the voices of the children gathered about the Christmas tree loaded with gifts and a-glitter with lights and tinsel, we should realize that we are a favoured people. In how many other lands are there not dire want and misery, and men, women and children facing actual starvation? Unless these conditions are corrected, there can be no real peace.

The rehabilitation of the world, in which this country is so vitally interested, calls for the co-operation in constructive action of all men who are interested in the welfare of common humanity. And if our efforts to establish peace on earth are to be of permanent value, if they are to spring from the fertile soil of

freedom and democracy, then, between nation and nation, as between man and man, there must be sincerity of purpose, mutual confidence and an unwavering determination to "keep right on to the end of the road."

* * *

Looking back across the years, we realize what a mighty contribution Canada made to the Allied cause in the hard fight to victory. In the national effort Hydro played its part along with other industries great and small. In spite of the depletion of its operating staff by enlistments in the armed forces, the Commission maintained its twenty-four-hour-a-day service to ensure a regular and uninterrupted flow of munitions. And in the Hydro shops many of those "bits and pieces" were forged and fashioned which went into the assembly of arms and equipment for our fighting forces and those of our allies.

Now that the war is over and victory has been achieved, we must **willingly** apply something of the same tireless energy and co-operation of effort to win the peace. For still some time—we cannot tell for how long—an armed force will have to be kept in readiness against the possibility of new aggressions.

This armed force, or international police, may afford protection as we set about the job ahead, but it will never make the peace that all men of goodwill are in earnest to achieve. Individuals and nations must be prepared to co-operate in something of that spirit of unselfishness and friendship which Christmas evokes. Unless that spirit reaches out far beyond seasonal bounds of well-wishing that custom seems to have set, the sweet-voiced Christmas bells may well convey a note of disappointment and warning when they ring out their message "Peace on earth—to men of goodwill."



By
The Editor

REMEMBER 1929? Folk were singing "Happy Days Are Here Again" and Rudy Vallee was crooncasting "Vagabond Lover." And in October of that year, Toronto dramatic critics acclaimed the "superb" performances of the late Sir John Martin-Harvey in "The Only Way" and "Lowland Wolf" at the Royal Alex. About that same time, too, newspaper flares proclaimed the market crash.

And just as the Christmas bells were carolling their joyous Noels in cities and towns across Canada in that year, a few folk—about fifty in all, comprising construction workers and engineers—were listening to a sound which had never been heard before in Northern Ontario's remote and lonely bushland at Ear Falls on the English river, north of the fiftieth parallel.

It was a cold, clear Christmas day; underfoot, the snow had spread a deep carpet which glittered with frosty diamonds in the dazzling sunlight. A stiff wind was cutting its way across the solid, winding expanse of Lac Seul and, occasionally, the mournful howling of wolves could be heard echoing through the nearby bush.

Dawn Of New Era

These facts, however, were of but passing interest to that little group who were engaged in the all important job of placing in service the first generator at Hydro's Ear Falls' development—a project which was undertaken in the spring of 1929 and on which some 350 men were engaged.

The busy, rhythmic hum of that unit not only heralded the dawn of a new era of progress for gold mining in Patricia District, but it proclaimed a new and important epoch in the history of Hydro.

Inauguration of service to the old Howey Gold Mine at Red Lake was Hydro's initial venture in supplying power for the mining of gold. Eight years later a second unit was in operation and by January, 1940, a third generator had been installed, bringing the present installed capacity of the Ear Falls' plant up to 17,500 horsepower. If and when it becomes necessary, a fourth unit can be added to bring the ultimate capacity of the plant up to 25,000 horsepower.

From that northern nerve centre of Hydro emanate three great arteries of power which thread their way through some 300 miles of bush to serve twelve mining properties in the Red Lake, Woman Lake and Pickle Crow areas, four townsites, the C.N.R. at Sioux Lookout and paper mills at Dryden.

Make Landing On Lac Seul

The development at Ear Falls is one of the Northern Ontario Properties which are operated by the Commission in trust for the province. These properties, in addition to Ear Falls, include plants at Abitibi, Rat Rapids, Crystal Falls, Stinson, McVittie, Coniston and developments in the Temiskaming district. With the exception of Abitibi, which supplies power at 25 cycles, these are 60-cycle generating plants.

First impressions formed by Hydro News of the Ear Falls' colony were from the air as the Junkers plane banked down and levelled off to make a landing on Lac Seul at Goldpines which is twenty minutes by Hydro boat from Ear Falls.

Imagine a table-top of white dolls' houses, which might be peopled by Lilliputian folk, a bushland of trees that look like small carrot tops; water that might be a mirror of rippled glass and a little, white dam which any young lad would like to get his hands on—add these together and they make a composite impression of Ear Falls from the air.

The pontoons of the plane glided onto the water which spread out in rolling, white plumes as the craft taxied to the landing. Stepping on to the landing at Goldpines the visitor experiences that indefinable thrill of having arrived at a "ghost town". "Town", of course, is not the word, even "village" suggests something far too pretentious in speaking of Goldpines as it stands today. Rather it is an outpost that seems to retain colourful memories of a vigorous past when the voices, songs and laughter of rugged men, who once sought gold in that area, re-echoed through the small humble dwellings where the days now seem to pass in Indian file. There is an air of sadness and loneliness about these little, unoccupied wooden shelters.

Mail And Freight Unloaded At Goldpines

Old-timers like Frank Carrol who has been trapping in the bush around that area since he came out of the last war in 1919, and Sam Cooper who has been prospecting and trapping in that territory for a number of years, will tell you that the population at Goldpines, although floating, reached a figure of 5,000 at the height of the gold rush days. Today the normal population is about 9 or 10 adults and there are now about six livable dwellings. The former Hudson's Bay post, now operated by Ron Nicholson, has been at Goldpines for the past half century, and is one of the two "shopping centres" for Hydro folk at Ear Falls, trappers, prospectors and transient visitors. The other store at Little Canada, less than a mile from Ear Falls, is operated by Frank Williams, son of a late Hudson's Bay post factor.

All air mail and air freight for Ear Falls and Little Canada are unloaded at Goldpines and taken a distance of some five miles to Ear Falls by boat during the summer months and by tractor and motor toboggan in the winter over a road cut through the bush.

The warmth of the welcome extended by the "recep-

tion committee" of Ear Falls' Hydro folk who were standing on the pier at Goldpines when the visitors' plane taxied in is something which has to be experienced to be understood. It's not just formal and courteous but something that seems to suggest that the heart is in the friendly hand that reaches out to greet you. Just one hand clasp and the visitor knows he has found a home from home.

Hydro News experienced the first of these handshakes long before reaching Ear Falls, however, for William (Bill) Dowds, superintendent of Patricia District, was on hand at Winnipeg, the first change-over point on the fast-moving northern tour. A man who might best be described as a hustling, untiring encyclopaedia of "Who's Who" and "What's What" throughout the Patricia District, he seems to possess the faculty of discovering the straightest line which is the shortest distance between two points and of landing at the right spot at the right time.

Taking off from Du Bonnet airport which is over 20 miles east of Winnipeg, Hydro News arrived at the Red Lake gold mining area where Hydro power is doing a tremendous job. Observations and experiences in that area, however, will be recorded in a future chapter for this story centres around Ear Falls which was reached after flying from Red Lake to Goldpines where the general utility motor boat was waiting to speed us over five miles of Lac Seul to the mouth of the English river where this small but important Commission plant is located.

Like Modern Utopia

On the doorstep of Ear Falls, the word "welcome" did not have to be on the mat. It could be found in the eyes and smiles of the people of this truly delightful and friendly colony whose spirit could best be described in words of the song: "Your friends are my friends and my friends are your friends."

The visitor to Ear Falls cannot but form the impression



TOP LEFT: P. J. Krull (left), assistant superintendent, Patricia District, and William (Bill) Dowds, the superintendent, talk things over.

TOP RIGHT: This is the dam at the Ear Falls plant where the present installed capacity is 17,500 horsepower.



BOTTOM LEFT: It was a beautiful, sunny day when Hydro News got this general picture of the colony, showing many of the homes.

BOTTOM RIGHT: This building is a former Hudson's Bay post at Goldpines. Operated by Ron Nicholson, it is a "shopping centre" for Hydro folk at Ear Falls.





PADDY KEESICK is the name of the gentleman shown above in action with the garden tool. Details of how Paddy's life was saved through Hydro's telephone system and the prompt action of a patrolman are told in the accompanying story.

that he has arrived at a modern Utopia where each seems to be concerned about the welfare of his neighbour and where there is no room for even petty differences. There were many instances which substantiated this impression. For example, Hydro News recalls walking along the crescent-shaped path of the colony one bright, sunny morning. Along this path are trim, white, flower-flanked homes and as we passed by we could hear many of the women-folk singing as they set about their daily homemaking tasks. It was the kind of singing which seemed to give vocal expression to a happy song in the heart.

That spirit of friendly, spontaneous co-operation is very much in evidence not only in day-to-day relations but when a social gathering is planned in the fine community hall which is equipped for the showing of movies and for badminton and dancing. In arranging such events, each lady has a part in the preparation of sandwiches, cakes, coffee, tea and in the serving of other "goodies." What might be termed "clean-up operations," including the washing of dishes, are handled on a rotating system, each having a turn at the job. As a result, all these activities move along smoothly.

In visiting a place like Ear Falls for the first time, it is perfectly natural for the visitor to form so many interesting impressions that it seems futile to attempt to chronicle them

in logical sequence.

And so if we flit from social activities to flowers, victory gardens—and they really went in for victory gardens in a big way—and homes, it is because of the fact that these features of the colony made a very deep impression upon our mind.

Thoroughly Modern Homes

Take the homes for instance. Each is a place of which any woman would be proud. There are spacious, dry basements, hardwood floors, up-to-date bathrooms, and thoroughly modern kitchens which the people themselves have equipped with electric ranges, refrigerators and other electric appliances. It seems almost incredible that one should discover all these conveniences in virgin bushland, miles away from large centres of population. But there they are! And the furnishings and appointments of these trim, well-built frame homes reflect the good taste and skill of the homemakers in this wild but delightful setting where Hydro folk, working one with another, have built for themselves a model colony.

And the gardens—many of them remind one of these coloured, seed catalogue illustrations which, in the spring of the year, urge one on to renewed efforts in the good earth. The trim lawns, the well-kept hedges, the wide variety of flora and the arresting symmetry of design all combine to enhance the beauty of the Ear Falls colony. Each member of this colony also had a victory garden during the war years and the results clearly showed that many noteworthy victories were achieved in the form of fine harvests. These plots, Hydro News was informed, will be carried on to provide necessary fresh vegetables in summer as well as supplies which women folk "do up" for the winter months.

Young Teacher From Eagle River

One of the many interesting features of the community life at Ear Falls is the attention which is given to the education and bringing up of the children. The school is not a pretentious building but, like the homes, it is well-built and, at the same time, well-equipped. Of even greater importance, is the fact that the young lives now being moulded within its bright, cheery confines are under capable and understanding direction in the person of Miss Bessie Gardiner, better known to everyone in the colony as

(Continued on page 8)



SHORT-WAVE radio plays an important part in maintaining communication between the Ear Falls' colony and the Commission's Administration Building in Toronto. Bill Dowds, superintendent of the Patricia District, (left) is shown above in the radio room during a "broadcast." The operator at the microphone is M. T. Dufault.

SCHOOL'S OUT! Lessons were forgotten for a few minutes when Hydro News called at the Ear Falls' school (below) with the camera "at the ready." Miss Bessie (Bobby) Gardiner, the teacher, can be seen standing at the back.



MANY GOOD things were being prepared in one of the rooms in the hall at Ear Falls when this photograph (below) was taken, showing Mrs. R. M. MacDonald (left) and Mrs. William Dowds in action, cutting cake and arranging sandwiches.



STEPPING OUT! This young lady appeared on the scene just as Hydro News got this shot of one of the homes at Ear Falls.



KIDDIES' CORNER! This demure young lady, Nancy Weaver, (centre) was just a little uncertain when she saw the camera. "Who says little boys can't handle dollies," cries Donald MacDonald (below) as he proceeds to demonstrate. His critical audience comprises Glenna Mills (left) and Carol and David Krull (right).



FROM THE roof of the community hall at Ear Falls Hydro News got this shot (below) which shows the home of Mr. and Mrs. R. M. MacDonald. This particular section of the colony is a favourite playground for the young children who are always eager to "swing high, swing low," or to build castles in the sand.



"Bobby". This quiet, charming young teacher, who hails from Eagle River, has the confidence and respect of her dozen or more pupils, ranging in age from 5 to 13. Enthusiastic about her work and well-informed, she is an interesting conversationalist and can step with the best on the ballroom floor.

The visitor to Ear Falls quickly discovers many advantages which the city dweller lacks. For instance there is no pedestrian v. automobile driver problem and children can play in safety.

Then there's something which seems to be different about the sunrise and sunset at Ear Falls—and throughout the North for that matter—a something which may be accentuated by the wild ruggedness of the country itself and by the clear blue of the sky. Even the individual who is too inherently lazy to make a habit of getting up in time to see sunrise will readily admit that it's well worth the effort when in this country which is so "strong" and so "free". In the morning, at sunrise, it is as if Nature were gradually pulling aside the shutters of night and opening the day with a golden invocation and, in the evening, the sunset comes like a restful benediction which fades all too quickly into the west where Nature observes her tenebrae.

In this latitude in the month of June it is a matter of only two or three hours between the sunset and sunrise.

To pass from the aesthetic to more material considerations, there is, in the centre of the colony, a small but interesting little structure which one enters to find heavily-reinforced doors. Here, in a sense, everything is "on ice" for this is the community refrigerator in which each member of the colony has a section of storage space for perishable foods. The refrigerator is divided into two main sections, one for fruits and milk and the other, which is colder, for meats.

Cut Off From "Outside World"

In the month of October, preceding the winter freeze-up, it is an established practice to take delivery of large quantities of essential food supplies, including beef and sugar. The same practice is followed just prior to the spring break-up. During these two periods in the year, which may extend over from three to six weeks, the colony is practically cut off from all physical contact with the "outside world" as planes can land only on water or solid ice. The river at Ear Falls, Hydro News learned, is really too narrow to permit planes to land in the summer while the ice does not freeze very solidly in the winter because of the current. As a result, all planes use Lac Seul (at Goldpines) as a landing "field" operating on floats during the summer months and on skis in the winter.

Although cut off, more or less, from a physical standpoint during these two periods of the year, the colony maintains daily contact with the Commission's administration building in Toronto through short-wave radio. At the same time, Hydro's own telephone system, linking up key points in the Patricia district, makes it possible for William Dowds, the superintendent, and his staff at Ear Falls to keep in constant touch with everything that is going on outside the colony. Incidentally, this telephone system has, on occasion, rendered invaluable service to out-

side sources in cases of emergency when time was a vital factor in getting into communication with some very isolated point.

While on the subject of Hydro's telephone service in this area, Hydro News obtained some very interesting facts showing how it had been the means of saving the life of a patrolman last summer. The incident occurred on the afternoon of July 26 and the location was Kaw Lake. This is one of the points at which a Hydro patrolman's cottage has been established to serve as a residence for two of the men who are responsible for patrolling a section of the 150 miles of the Uchi line.

A few minutes before 1 o'clock that afternoon, assistant patrolman, Jim Cullen, who is stationed at the Crow River transformer station, heard peculiar sounds coming from the telephone howler—sounds which indicated that a man was in distress. Cullen immediately reported the matter and a check-up made at the four Uchi patrol headquarters—Hailstone, Slate Lake, Fry Lake and Kaw Lake—narrowed the source of trouble down to the last named point where Paddy Keesick, a young Indian lad was on duty.

Made Amazingly Speedy Recovery

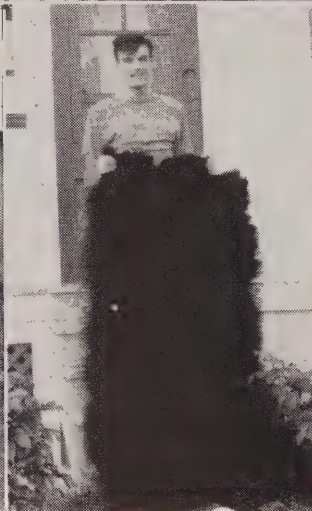
Hydro men, with the co-operation of Provincial Officer Ken Rayner, and Pilot Eddie Richards and agent T. Forsyth of the Canadian Pacific Air Lines at once arranged for a mercy flight to Kaw Lake. On arrival, they discovered Keesick lying on the floor, unconscious and bleeding profusely, and with a .38 calibre rifle on the floor behind him. An investigation showed that Keesick had been cleaning his rifle when it discharged accidentally and a bullet entered the right side of his chest. He had managed to drag himself to the phone and unhook the receiver but was unable to speak. His moans of pain, however, were heard by Cullen coming over the howler at Crow River.

After first aid had been administered, Keesick was rushed by plane to the hospital at Central Patricia where an emergency operation was performed. Dr. H. M. Connell, the doctor in charge, and nurses Ethel Dobson and Jeanette Douglas can testify to the amazingly speedy recovery made by this young lad who insisted on returning to work on August 10. He was not however, permitted to resume his regular duties immediately.

At Ear Falls where the mercury can top the 100 mark in the summer and hit 40 below in the winter, one can learn many interesting facts, not only about the place itself but about the people who live there and their many activities.

To meet Bill Dowds, the superintendent, for the first time is like running into a refreshing northern breeze. Known to practically everyone throughout the Patricia District, he possesses a sense of humour and these human qualities associated with the winning of friends and the influencing of people. A graduate of the University of Toronto in engineering, Mr. Dowds became identified with the Commission in 1918 when he entered the meters section of the laboratory on Strachan Avenue. In the summer of 1940 he first went to Ear Falls on relief duty and the following year he returned to take over the duties of superintendent in that district. Mr. Dowds and his

(Continued on page 10)



MOST OF the folk at Ear Falls, except those on duty, turned out for the pleasant picnic (top) arranged during the brief visit of Hydro News. J. H. Mackay got the picture.

SITTING IN their garden, Mr. and Mrs. George Weaver (left centre) faced the Hydro News camera. Nancy is sitting on daddy's knee, while mother has Judy on her lap.

IT'S A real skin game so far as John D. Hamer (second centre) is concerned when a bear ventures near the Ear Falls' colony. One might say that he's a "rugged" individualist!

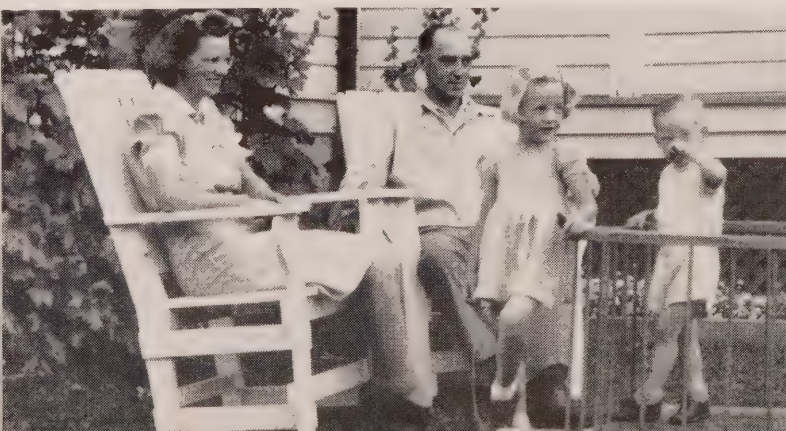
THEN THERE were Mr. and Mrs. O. M. Nymark (third centre) two very interesting folk at the colony. Mr. Nymark has a reputation of being a mariner of no mean ability.

"OH JOHNNY!" someone exclaimed as Hydro News got this shot (right centre) of John Clark at Ear Falls. It's quite all right, the young lady is Johnny's wife.

THIS HAPPY, smiling couple (bottom left) are William (Bill) Dowds, superintendent of the Patricia District, and his charming wife. Standing are: Donald, aged 13, and Doreen, aged 15.

PETER J. KRULL (bottom centre) assistant superintendent of the Patricia District, arrived home in time to join his wife and kiddies, Carol and David, in the garden for this picture.

LIKE MOST of the ladies at Ear Falls, Mrs. MacDonald (bottom right) seems to be always smiling. Here she is with her husband, Roy, who is a first operator. The gentleman in front is Donald.



NORTH OF THE FIFTIETH PARALLEL

(Continued from page 8)

wife, Dorothy, who incidentally, is a fine swimmer, take a very active part in all community affairs. Their children, Doreen aged 15, and Donald aged 13, attend school in Toronto and spend the summer months with their parents at Ear Falls.

Edmonton-born Peter Krull has been with the Commission since 1940, coming from Cameron Falls, where he was electrician to take over the duties of assistant superintendent of the Patricia District at Ear Falls. The Krulls have 2 children, Carol, aged 4, and David, aged 2. Then there are Mr. and Mrs. R. M. MacDonald and Donnie, aged 3, of whom Hydro News has many happy memories for it was in their home that we resided during the stay at Ear Falls. Mr. MacDonald, a keen sportsman, is a first operator man at Ear Falls.

Sighted Bear: Shot Same

Also a first operator, J. D. Hamer is, in his leisure hours, a keen hunter. He was able to show Hydro News a magnificent bear pelt which he is making into a rug and which bears testimony to his skill as a marksman. Incidentally, there has been a recent addition to the Hamer family, a baby boy arrived early in the fall. Hydro News understands that there has also been an addition to the family of Mr. and Mrs. D. C. Mills whose first child, Glenna, is about 3 years old. Mr. Mills is an operator-in-training as are O. M. Nymark and Maurice T. Dufault. The Nymarks have two little girls, Carol, aged 3, and Shirley, now a year old, while the Dufault children are, Vivian, age 11, and Ricky who is 7 months old.

At the home of Mr. and Mrs. George Weaver, Hydro News met Nancy, who is 2, and Judy, who is nearly a year old. Mr. Weaver is a patrolman at the Ear Falls plant. There are three children, Sandra, age 5, Karen, 1, and Tanis, 5 months, who make things quite interesting in the home of Mr. and Mrs. W. Wardrop. Mr. Wardrop, Hans Halverson and J. H. (Jack) Moeser are utility men at the plant.

Among the other folk Hydro News recalls meeting are Albert Young, John Clark, Ray Bicknell and four students, Don Pounder, Lyn Seymour and Don Parr who served as operators during the summer months.

During the war, folk at Ear Falls played their full part in supporting Canada's war effort through Victory loan, Red Cross and other campaigns. The active role they play in the life of the community is reflected in the number of committees set up to carry on specific activities. For instance the interests of the Red Cross are in the capable hands of Dan Mills, chairman, George Weaver and Mrs. Dowds who acts as secretary-treasurer. Incidentally, it is reported that Ear Falls has the smallest registered branch of the Red Cross in Canada. Activities in the community club come under the direction of a committee headed by Peter J. Krull, with Dan Mills as vice-chairman and Miss Bessie (Bobby) Gardiner, the school teacher, serving as secretary. The entertainment committee comprises Mrs. Dowds, Mrs. MacDonald and Jack Hamer. Ear Falls has also its board of education, the chairman being Peter J.

Krull assisted by trustee Dan Mills and secretary Roy MacDonald.

The Hydro folk at Ear Falls reside in seven Commission-built homes and in six privately-owned dwellings. A small residence, which serves as a staff house, is available for single men and visitors.

The friendly, home-from-home spirit, which one discovers within the warm, frame walls of this little staff house, is a tribute to the versatility and personality of Mrs. J. H. Moeser whose husband, Jack, a utility man at Ear Falls, has, like his wife, a smile and a helping hand for everyone.

Mrs. Moeser, better known as "Mo," when not engaged in turning out meals, pies and cakes, which are the talk of the colony, finds time to knit and sew. If she were not so youthful in appearance, she could be called the mother of that house.

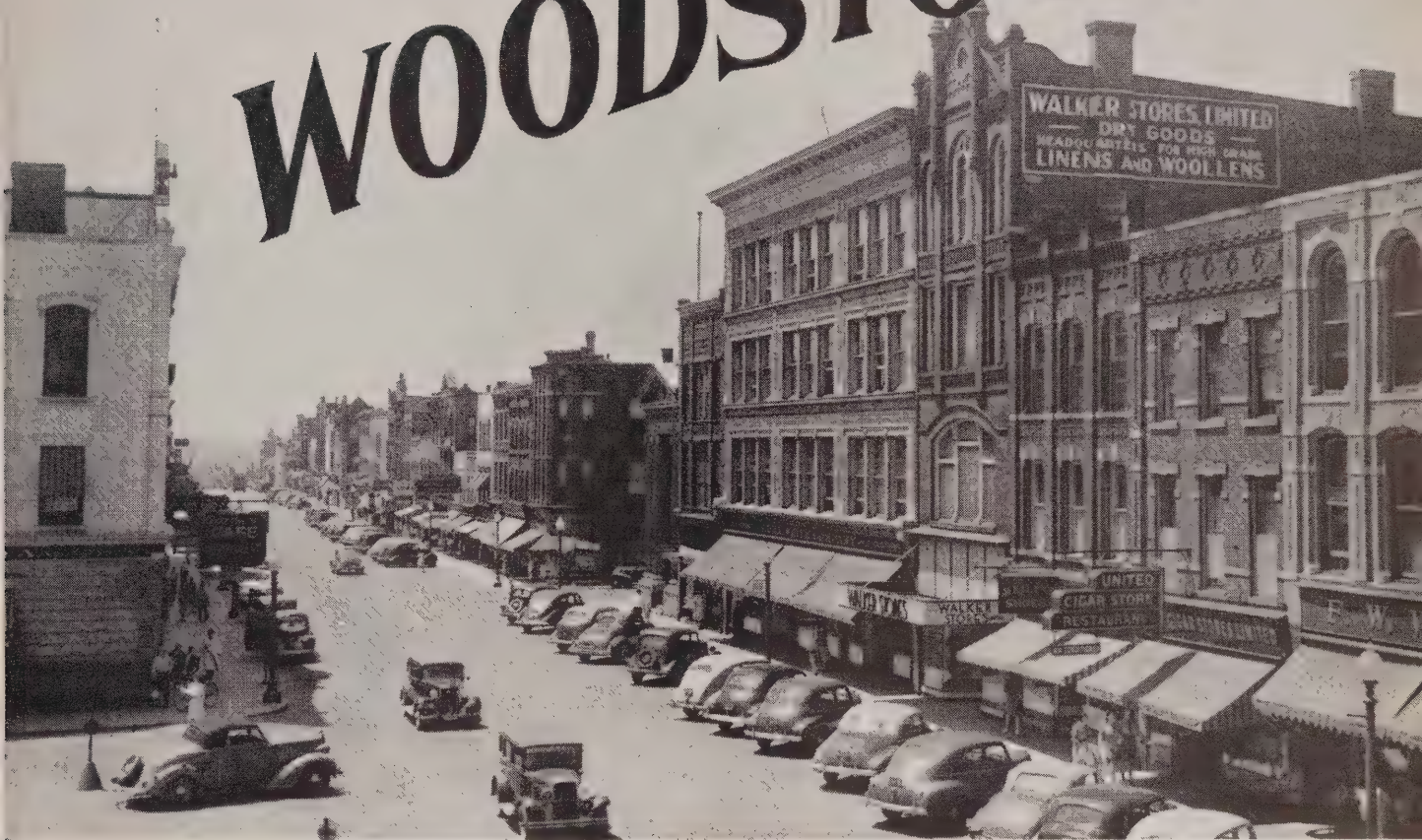
While in the colony, Hydro News spent some time at, and in the vicinity of, the generating plant itself. The dam, about 600 feet long and 45 feet high, is a reinforced concrete structure which was built by the Dominion and Provincial governments of Ontario and Manitoba for flow control on the English river. It contains 20 sluices, 8 of which are reserved by the Commission for the development of power. Six of these sluices are at present in service. Water is conveyed from the dam through 4 wooden penstocks, each of which is 170 feet long and 12 feet in diameter, for numbers 1 and 2 unit turbines, two of these penstocks serving each turbine. The penstock for number 3 turbine is of reinforced concrete and is almost square in cross-section. The numbers 1 and 2 units are of the vertical, single runner type with fixed turbine blades, each being rated at 5,000 horsepower with a 36-foot head. Number 3 unit, rated at 7,500 horsepower at a 36-foot head, has an automatically adjustable turbine blade runner of the Kaplan type, the second unit of its kind to have been installed in Commission plants.

In addition to the plant, the colony itself, the people and their activities, there is something else which arouses the interest of the visitor. That is what is known as the marine railway. Hydro News was very fascinated in seeing what looked like an out-size, open, shallow railway freight car go clicking down a set of rails and disappear into the waters of the English River. Controlled by a steam-operated cable, it emerged from the depths bearing a heavy, and heavily-laden, flat-bottom scow which it portaged from one side of the river to the other where another boat was waiting to take the scows on the next lap of their journey. The maximum load that a scow can carry, Hydro News was informed, is approximately 15 tons and, on occasion 17 tons.

In addition to the marine railway portage at Ear Falls, there are also similar portages at Snake Falls, Sam's Portage and Snow Shoe. The scows, using these marine portages, transport freight from Hudson to various points in the Red Lake area.

In leaving Ear Falls and its kindly, friendly people one experiences something which is much more than a feeling of regret. As the Hydro boat chugged away from the colony, bearing us on the next lap of the northern trip, we remember the little group on the shore waving their "Alohas". We waved back, and as we looked, the view was just a little misty.

WOODSTOCK



VIEW OF main business section of Woodstock looking west from the central square.

AMONG the first seven towns in Ontario to sign up for the services of Hydro in the year 1908, the young city of Woodstock has grown rapidly and has become an important industrial and agricultural centre in busy south western Ontario.

Woodstock is an example of a name and tradition affectionately carried over from the Old Country. Named after the town of Woodstock in England, both the new town and the old are in Oxford County and both are set amid not dissimilar rich and beautiful country. A more concrete tie is the town hall, an interesting building that might remind the visitor of the meeting halls in New England towns. In 1853 the new town, then with a population around three thousand, put through a by-law to borrow twenty-two hundred pounds to build a town hall to be modelled on the town hall of Woodstock, England. It stands today as a symbol of the strong tie between the old land and the new.

A Progressive City

But if Woodstock keeps a tie with the past, its life is mainly very much a thing of the present. It is a bustling, progressive-minded city which has just now been turning its full energies into the war effort. Ideally situated in the centre of one of the richest dairy areas in Canada, it is also in a strategic position in the industrialized south west. It is 27 miles from London, 90 miles west of Toronto and is on the main lines of both railways.

The history of the town dates from the end of the eighteenth century. In 1793, Lieutenant-Colonel Simcoe, then Governor-General of Upper Canada was making his way through the woods from Newark (now Niagara-on-the-Lake) to Detroit. He made camp on what is now the west end of the city and finding the site attractive, he then and there reserved a tract of land for a town plot. However, it was not until 1832 that a proper survey was made and the first settlers began to come in.

The next man to be identified with the beginning of the town is Admiral Vansittart, an English naval officer who fought through the Napoleonic war. He bought a piece of land in 1834 and opened a tavern and store which became a sort of nucleus of the new settlement.

In 1835 postal service was started and the new community was officially named Woodstock and began to grow in earnest. In 1901 it was incorporated as a city.

Early town activities centred around farming. However a varied group of industries gradually grew up and today the products of the city include such widely-diversified items as textiles, fire engines and apparatus, hosiery, trucks, concrete pipes, machine parts, whole and powdered milk, aeroplane tubing, stoves, pipe organs and paper boxes. Among the well-known industrial names are Firestone, La France Textiles, York Knitting Mills, Bickle Seagrave,

(Continued on next page)



A HYDRO construction crew puts up some new poles on a Woodstock street. Centre picture shows the fountain and square in the heart of the town. On the right is one of the fine old Woodstock residences on Vansittart Avenue, built in 1861.

Concrete Pipe Ltd., Eureka Foundry, Shell Transport, Massey Harris, Halman Machines, Standard Tubes and Ralston Purina.

Contribution to War Effort

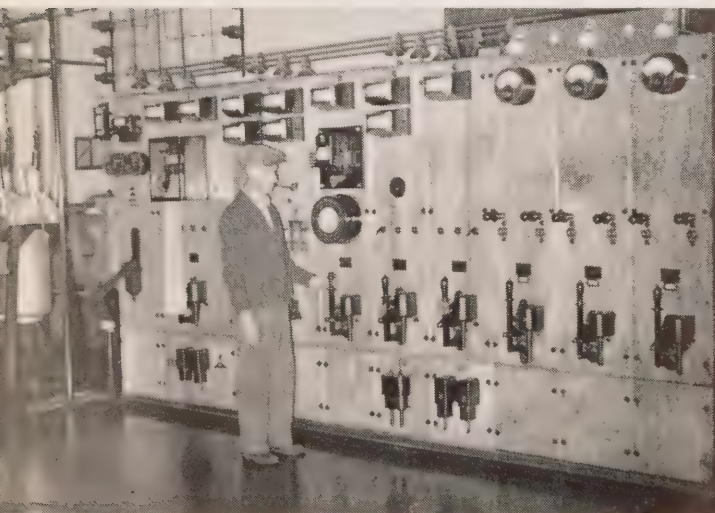
Like all other Ontario towns Woodstock has contributed its share to the war effort, both in war services and industrial production. Eighty percent of the industries have been doing war work and have turned out among other things, aeroplane parts, shells, auto tire fabrics, textiles, plywood for planes and army and airforce trucks and trailers. The population of the town increased from 11,578 in 1939 to 13,021 at the present time. There have been 3,600 war workers in all.

Hydro has played a part of considerable importance in the growth of Woodstock. Electric power was first used in the town in 1881 when a limited number of

business places on the main street were supplied from a generating plant located in one of the industrial plants. In 1891 the plant was bought by the private company, who at that time supplied artificial gas to the town.

When Woodstock was incorporated as a city in 1901 the plant was bought and operated by the city under a Water and Light Commission. J. G. Archibald was appointed manager and occupied the position until 1941. Through his efforts, Woodstock became one of the pioneers for Hydro. When Hydro began in 1905 the Woodstock Commission had the vision to see its possibilities and was among the first seven to sign an agreement for power in 1908.

In 1921 the Water and Light Commission was changed to a Public Utilities Commission and for the past few years has seen a rapid and steady growth under the very able managership of J. R. Sullivan. The office, centrally



ENTERING WOODSTOCK'S main power station, the cameraman got this shot of the switchboard. On the right are members of the local Hydro office staff. They are, from left to right, Geraldine Boemhower, Kathryn Balls, Eleanor Cameron, Alec Wishart and J. R. Sullivan, manager.



TWO VIEWS of the stalwart fire-fighters of Woodstock. On the left is the chief with a group of his men on one of the engines. On the right is a scene of "reel" action with one firefighter climbing to dizzy heights on an extension ladder. There is a certain civic pride in the fact that not only is the fire equipment up-to-date, but it is all manufactured right in the town of Woodstock.



situated on Dundas street, is a very busy place and the Hydro department now employs a staff of seventeen people.

The city is served by two power loops, one of 26,400 volts and the other 2,200 volts, both going through all substations. The city contracted with H.E.P.C. in 1910 for 1,500 horsepower and 800 horsepower were actually in use. Last year the peak demand was 9,827 horsepower.

A "House Proud" City

The visitor to Woodstock comes away with an impression of wide lawns, trees and beautifully kept homes. The city admits to being "house proud" and certainly has every right to be. Mixed with the strictly modern are a good proportion of the comfortable and gracious-looking homes of the last century. One of these houses on Vansittart Avenue is a fine example of that period. It was built in 1861 and in 1863 there was a ball to serve as house warming, a very grand affair with the music especially imported from Ingersoll at a cost of two pounds and ten shillings!

As well as a group of houses built in the early days of the town and the town hall, there is Old St. Paul's church from the same period and also the county gaol.

Woodstock is particularly well equipped with attractive parks. There are five altogether, the largest being South Side park where there are playing fields and facilities for boating, swimming and dancing.

Another source of town pride is the drinking water, which comes from springs south of the city and is particularly pure and cold.

On the cultural side, Woodstock can take its place with any community in Ontario. It has a thriving daily newspaper and a well-equipped library. Of the town schools the High and Technical school is a particularly fine example

of a modern, handsome and efficiently-conducted centre of learning. It played a not unimportant part in the city's war effort by conducting night classes to train workers in business practice, mathematics, machine shop practice, forge work, acetylene welding and other subjects. And among other things, the people of Woodstock are interested in music, as evidenced by the fact that as well as the usual number of church choirs there are junior and senior music clubs and also a community concert association.



CHILDREN'S POOL in Southside Park, showing in the background transmission lines, the Woodstock high tension station and the public utility substation and pumphouse.



By Mildred C. Redmond, *Hydro News*

STRICTLY AN artist's-eye view of B. O. Salter, head of the purchasing department! He is, presumably, returning from a hard day's shopping for his large Hydro "family."

HOUSEWIVES aren't the only ones having shopping troubles these days. If you want to see shopping on a gargantuan scale and with the corresponding gargantuan headaches, visit the Commission's purchasing department. Like the old woman in the shoe this department has an oversize family to buy for, but unlike the old woman it knows what to do about it. For in spite of shortages and complications, the department's shopping bag is still full of everything from needles to generators, from tins of pork and beans to Hydro poles, from gallons of paint to railway and aeroplane tickets. Once it even contained a nanny goat, a special request from a northern colony!

Large and Widely Scattered

The department can echo the complaint of every housewife that shopping is no longer a matter of comparison and careful choosing but rather of taking what can be found and feeling grateful about it. This state of affairs is about the same whether it's a carbine that's to be bought or a length of calico.

As well as lack of materials there has been the further problem of government regulations governing the distribution of all available materials. However, the government recognizes the essential nature of Hydro and due allowance has been made. Like the housewife the department can grumble a little that the quality of things is not what it used to be. But like everyone else, it is making the best of it until the times are back to normal.

The Hydro "family" that must be shopped for is both large and widely scattered. It comprises the Commission's

headquarters in Toronto, all electrical plants and operating stations in Ontario, all the rural districts, the northern construction camps and the northern Hydro communities. In fact, it includes the whole Hydro system from the borders of Manitoba to Quebec and from the Abitibi Canyon to the Great Lakes.

List Includes All Equipment

For this reason the range of materials bought is immense both in size and value, and may include, for example, a Chippawa generating unit that costs close to half a million dollars to paper clips at thirty cents a thousand. It covers all equipment—furniture, paint, fixtures—for office buildings—transformers, condensers, insulators, poles, cable—all the enormous mass of supplies for the electrical system—supplies for construction camps which means not only machinery but blankets, cigarettes, books. The shopping list even includes all transportation tickets used by Hydro employees. This may seem a small item but in one year it amounted to \$28,000. One member of the "family" that needs some special shopping is the group of northern Hydro communities. They are shipped everything from furniture and machinery to cough medicine and apple pie.

And not only does this immense collection of supplies have to be bought, but they have to be shipped out to every corner of the province. In spite of the war the department says that they have had very little shipping trouble.

To buy supplies on this scale takes money—to put it mildly—and the purchasing department has an expenditure

of ten million dollars a year in normal times. This doesn't count any special or large new development.

Efficient Purchasing Organization

The department is referred to throughout the business world as an example of an efficient purchasing organization. Its system has been compared to an assembly line in a manufacturing plant. The requisition, or written request for something, comes in at one end, passes through the hands of various members of the staff, each of whom deals with a specific phase of the work, and comes out at the other end as a finished order. The requested goods must be located, priced, various sources compared and the goods, where necessary, finally inspected. For large purchases, such as pieces of machinery, experts from the Hydro research department are called upon to inspect and report, before the decision is made to buy. The purchasing staff itself is non-technical and prefers to consider itself as a

service department ready to carry out the requests of all other departments and sections. It completes as many as 200 orders a day and in rush times has even been known to turn out 300 a day. The clerical end of it is fairly complicated, for example, each finished order must have ten to sixteen duplicates sent out or kept for reference.

Department Is Unique

One thing that makes the purchasing department unique is that its purchasing field is very much wider than most similar organizations. The average firm buys certain raw materials for manufacture. But Hydro buys almost entirely finished products and the range of purchase is immense. Which means, of course, that the range of contacts is equally large. For instance there are 500 basic commodities on the shopping list and each one of these consists of almost endless variations. Take one basic item—

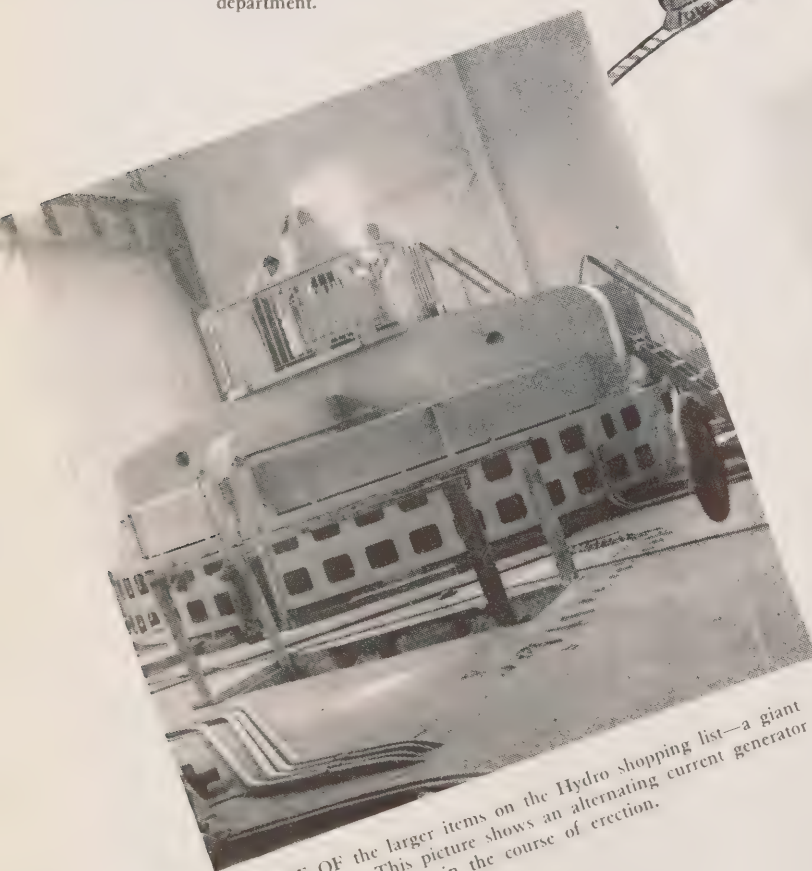
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RECEPTION END of the Hydro purchasing department which leads to a series of inner offices where the business is carried on. The offices accommodate a staff of twenty-eight.



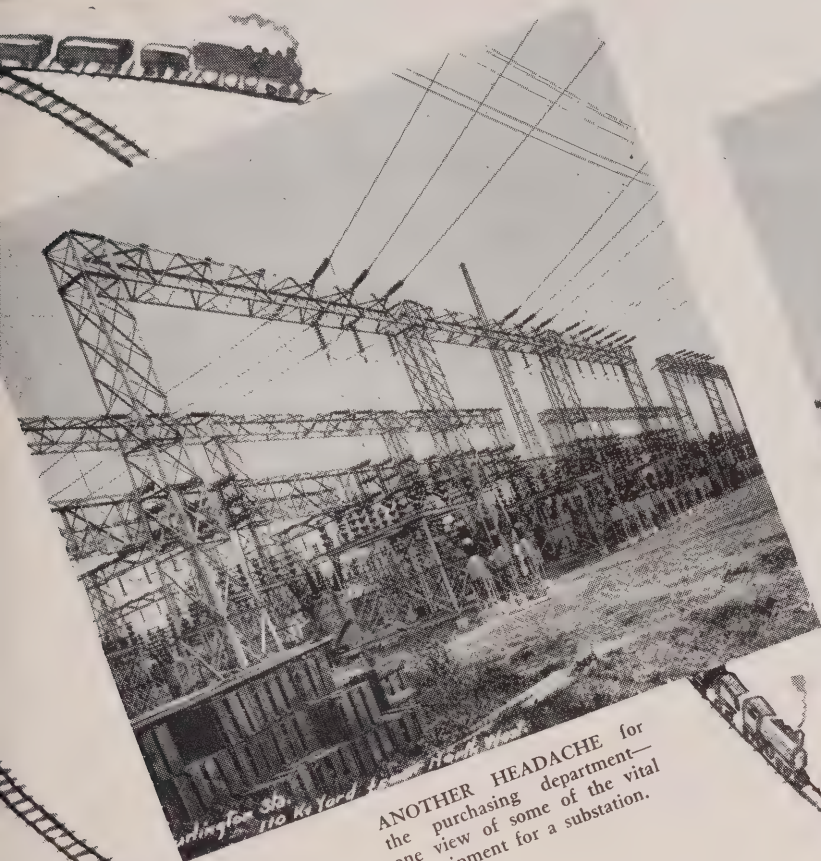
H. W. BECK is busy at his telephone putting through orders that will not only bring supplies to the main building (left) but will send them by train and air to all the Ontario Hydro centres. Below and opposite are samples of the types of purchases made by the department.



ONE OF the larger items on the Hydro shopping list—a giant generator. This picture shows an alternating current generator in the course of erection.



TRANSFORMERS AND cables—some of the routine supplies that Hydro needs for its thousands of miles of Hydro service throughout the province.



ANOTHER HEADACHE for the purchasing department—one view of some of the vital equipment for a substation.



TRACTORS RENDER many useful services for Hydro. This one, for instance, is on winter duty, hauling a load of logs which are to be used in construction operations.



ABOVE IS a northern construction camp and right is the inside and outside of the general store of the Abitibi Canyon Colony. Both the camp and the store depend upon the purchasing department for essential supplies.



"OLD SOLDIERS NEVER DIE"



MORE THAN a hundred members of the Ontario Hydro Branch of the Canadian Legion attended their eleventh Remembrance Day dinner at the Military Institute, Toronto, where F. G. Gardiner, K.C., (left) delivered an inspiring address postwar job of rehabilitation. Sitting on the speaker's left is G. F. Aram, president of the Hydro Branch.

COMMEMORATING Remembrance Day with traditional ceremonies at the cenotaph, and celebrating the completion of more than ten years of service and association with the Canadian Legion by a banquet at the Military Institute, members of the Ontario Hydro Branch of this nation-wide organization of war veterans turned out on November 9 in one of the best-attended and most enthusiastic rallies they have ever held.

For the ceremony at the cenotaph the legionnaires lined up two deep, with J. A. S. Milne and W. L. Dymond on the flank with the colours. The president of the Hydro Branch, G. F. Aram, who was greeted by Mayor Saunders, placed a wreath at the foot of the cenotaph and the trumpeter, Roy E. Taylor, played the last post. The colours were then marched off and the parade dismissed.

At the Military Institute the solemnity which marked the detail at the cenotaph changed to gaiety and good cheer as servicemen of both wars mingled in good comradeship. After half an hour or so of "reminiscing", all repaired to the banquet room where a repast worthy of the occasion was served.

When the toast to the King had been duly honoured, the president called upon the guest speaker of the evening, F. G. Gardiner, K.C., who spoke upon the work of the Canadian Legion and its place in the new postwar world.

The Canadian Legion, he said, must be one of the

great spearheads in the winning of the peace just as it had been one of the great spearheads in the national mobilization for war.

"And," he added, "we must throw open our doors to those young soldiers who have just returned from overseas. Ours must be one united effort in this new era upon which we are just entering."

Wholeheartedly, the speaker emphasized, the Legion must throw its weight behind the national effort to speed up rehabilitation and secure the rapid re-entry into civilian life of returned soldiers, sailors and airmen.

"And let us old veterans not be too patronizing," urged Mr. Gardiner. "These chaps who call one another 'ground-boys, pigeons and ducks' have been around a lot more than we ever were. Instead of being tied down to one front as most of us were, many of them have been not only in France and Flanders but in Italy, North Africa and even in the Far East."

Thanks to the speaker were voiced by Fred Wilson after which a toast to the young veterans was proposed by H. A. S. Molyneux, and replied to by J. W. Simpson.

One of the feature activities of the Ontario Hydro Branch of the Canadian Legion is the publication of a "Hydro Legion News". E. L. Thomson, the editor of this bright and interesting little publication, spoke briefly of its aims and objectives. W. J. Greves, secretary of the Hydro Branch, and other members were numbered among other speakers.



"WHEN GOOD fellows get together" . . . On the right is shown the ceremony at the cenotaph where G. F. Aram, president of the Ontario Hydro Branch of the Canadian Legion, placed a wreath in presence of Mayor Robert Saunders. In the background are the colours carried by W. L. Dymond and J. A. S. Milne.



THIS "OLD sweat" (J. N. Crawford) is discussing the merits of omelettes and vin blanc, vintage 1914-18, with a new arrival from the front who, owing to the informality of the occasion, was introduced to Hydro News as "Hughie." At the right, E. L. Thomson has a few words to say about the Hydro Legion News of which he is editor. At his left is W. Wheelans, commander of Legion Zone, 18D, while on his right is E. B. Hubbard, second vice-president of the Hydro Branch.

\$200 MILLION PROGRAMME IS LAUNCHED BY HYDRO

**Three Projects Now Under Way To Provide Half
Million Additional Horsepower At Cost Of
\$65,000,000 Over Next Four Years**

MARKING the start of Hydro's \$200,000,000 programme of postwar expansion, work is now under way on three projects which, over the next four years, will make available half a million additional horsepower at a cost of \$65,000,000 to help meet heavy and sustained demands for Hydro power in Southern Ontario and, at the same time, provide jobs for several thousand men.



THIS ILLUSTRATION shows chain soundings being taken on the main channel at the Des Joachims development, which is 200 miles north of Toronto and 100 miles northwest of Ottawa.

The agreement reached between Ontario and Quebec on the development of power sites on the Ottawa river, paved the way for a start being made on the 400,000-horsepower plant at Des Joachims which is 200 miles north of Toronto and 100 miles northwest of Ottawa. This development, which will incorporate all the scientific and technical advancements made during the war years, will cost approximately \$50,000,000 and, it is expected, will be supplying power by 1949. Plans for the Des Joachims generating plant, which ranks as the first major postwar project of its kind in Canada, include the construction of a concrete dam, 2,500 feet long and 135 feet high, along with a control dam to regulate water flow.

The Hydro-Electric Power Commission of Ontario has also started work on a 54,000-horsepower development at Stewartville on the Madawaska river, about 40 miles from Ottawa and near Arnprior. This development will cost approximately \$9,000,000, the Commission announces, and is likely to be placed in service by the fall of 1947.

Work is now well under way on the \$7,000,000 extension of the DeCew Falls plant to provide an additional 70,000 horsepower. Located near St. Catharines, this development was placed in service in October, 1943, and the new 250-ton generating unit, now being installed, will be supplying power by the summer of 1947.

DR. R. E. GABY PASSES

DR. ROBERT E. GABY who had been identified with The Hydro-Electric Power Commission of Ontario for the past 26 years, passed away suddenly on November 15 at his home, 142 Hilton Avenue, Toronto.

Dr. Gaby who was a native of Almira, Ontario, was in his 65th year. He came to the Commission in 1919 and served as consulting surgeon and general medical advisor.

Dr. Gaby received his early education in Toronto and later attended the University of Toronto, graduating in 1903 with the degree of B.A., and from Cornell Medical College in 1907 with the degree of M.D. He was a Fellow of the Royal College of Surgeons, Canada, and also a Fellow of the American College of Surgeons.

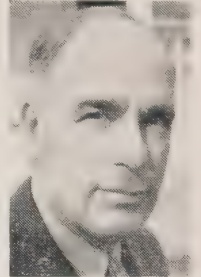
An accomplished linguist, he taught languages while attending Cornell, and in later years, after he became identified with the Commission, he found this knowledge very useful in that he was able to talk to people of many nationalities who came before him for examination.

During the First World War, Dr. Gaby served as a major in the Royal Canadian Army Medical Corps with the 4th Canadian General Hospital, and saw service in Salonica, Mesopotamia, Egypt and England.

In 1911 he was appointed to the staff of the Faculty of Medicine, University of Toronto, and to the staff of Toronto General Hospital. Since that time he has served with distinction in various posts with these organizations.

He was a member of the York Club and International Alumni.

Surviving are his widow, the former Lillian Smith, a son, Dr. John R. Gaby, R.C.A.M.C., and a brother, Dr. F. A. Gaby, who a number of years ago, was chief engineer of The Hydro-Electric Power Commission of Ontario.



A DAM, 2,500 feet long and 135 feet high, is to be constructed at the site of the new 400,000-horsepower Des Joachims development. This reproduction shows chain soundings being taken at the site.



CHARLES BURSTON, mayor of Woodstock and member of its public utilities commission was born in 1881 in Somerset, England and received his education there. Coming to Canada, he took up his residence in Woodstock, where in private life he is engaged as an engineer. Mr. Burston has had long civic experience, serving eight years continuously as an alderman before election this year as chief magistrate of the city.



CHARLES GEORGE MITCHELL, who was born in Toronto in 1907, received his education at Upper Canada College, University of Toronto and Osgoode Hall. His business interests took him to Woodstock, and this year he was elected a member of the public utilities commission. Mr. Mitchell is keenly interested in Sports and when time permits plays a useful game of badminton or golf.



HAROLD R. HENDERSON, a member of Woodstock Public Utilities Commission and a former vice-chairman of district No. 7, O.M.E.A., was born at Hespeler, Ontario, in 1898. He was educated at Campbellford and Woodstock and enlisted in the first World War with an infantry unit, later transferring to the R.A.F. with which he saw action as a fighter pilot. Returning to civilian life, he became a founder and partner in a firm manufacturing incandescent lamps. Mr. Henderson is fond of shooting, fishing and golf.



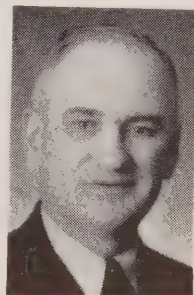
ROBERT DITCHBURN MCKENZIE, Hydro Commissioner at Woodstock was born at Gravenhurst and moved at an early age to Burgessville, a community where his grandparents had settled upon arrival from the old country some 90 years ago. He attended schools at Burgessville and Woodstock, where he played on the football and baseball teams. Mr. McKenzie has served four terms with Hydro as chairman, vice-chairman and commissioner.



JAMES CARNWATH, chairman of the Woodstock Public Utilities Commission, was born in New Brunswick in 1890, and attended McGill University, Montreal, where he graduated as a civil engineer. His vocation took him to Woodstock where he soon identified himself with civic interest.

In the city of his adoption Mr. Carnwath has served both on the Board of Education and on the public utilities commission, of which he was this year elected chairman.

His leisure moments are devoted to a wide range of interest, varying all the way from stamp collecting to golf and figure skating.



JAMES RUSSELL SULLIVAN, Manager of the Woodstock Public Utilities Commission, is a native son of Woodstock where he was born in 1893. He is a graduate of McMaster University and of the School of Practical Science, University of Toronto, and a member of the Society of Professional Engineers. After graduation Mr. Sullivan was employed for several years as electrical and waterworks engineer with various enterprises throughout the province. He has now been 25 years with the Woodstock P.U.C. Outside of his work, Mr. Sullivan has a wide range of interests and enjoys nothing better on a summer's evening than a game of bowling on the green.



A "DEER" DINNER

Members of the Chatham Public Utilities Commission had their annual venison dinner in the Queen Street sub-station on December 5.

This event, which has become almost a tradition, is sponsored by R. S. Reynolds, manager and secretary of the Chatham commission, for the members of his staff and their wives and friends. Approximately 90 attended and "Smoky" Reynolds said everyone had plenty of venison which, by the way, was obtained on his latest hunting trip in the Ottawa Valley.

The evening's programme included singing, dancing and games.



FLYING OVER the main door of the Commission building, (left) is the flag, that was presented to the Commission for having gone over the top in the recent Victory Loan. Presentation of the banner (right) took place in the lobby of the building where M. J. McHenry, director of promotion and chairman of the Commission's Victory Loan committee, is seen receiving the flag along with the brochure in which are reproduced the documents of surrender of World War II. The group comprises from left to right, J. J. Jeffery and A. W. Manby, both members of the Hydro committee, A. L. A. Richardson, chairman of the Toronto Payroll Savings Section, M. J. McHenry, and Commander Duff Wood who is the organizer for the Toronto Payroll Savings Section. Commission employees (below), including many who had served as canvassers, watch the ceremony.

IT swayed and fluttered proudly above the main entrance to the Commission's Administration Building, its golden-bordered background of royal blue accentuating the symbols of victory and the Ninth Victory Loan.

This flag of achievement, signifying that Hydro employees had attained their objective in the recent victory loan campaign, was presented to the chairman of the Commission's victory loan committee, in the presence of those who had co-operated with him in the planning and direction of Hydro's successful effort.

Along with the flag, the Commission received a handsome portfolio of reproductions of the Documents of Surrender signed by the representatives of the Allied countries and of Germany and Japan.

The presentations were made by A. L. A. Richardson, chairman of the Toronto Payroll Savings Section, who was

accompanied by Commander Duff Wood, who worked closely with the Hydro Committee.

Both paid high tribute to the committee, comprising M. J. McHenry, chairman; Dr. Otto Holden, A. W. Manby, J. J. Jeffery and J. V. Walters and also to the corps of canvassers who had done such an outstanding job.

In replying, Mr. McHenry not only expressed appreciation to those who had worked with him but also thanked Hydro employees for the way in which they had supported the loan. He stated that the objective had been exceeded by a substantial amount in Toronto and made special reference to the field force whose total subscriptions almost doubled those in the 8th Victory Loan. An outstanding feature of the campaign, it was pointed out, was the large increase in the number of employees subscribing. The increase in the field section was approximating 600.



Instrument of Surrender

of

All German armed forces in HOLLAND, in
northwest Germany including all islands,
and in DENMARK.

1. The German Command agrees to the surrender of all German armed forces in HOLLAND, in northwest GERMANY including the FRISIAN ISLANDS and HELIGOLAND and all other islands, in SCHLESWIG-HOLSTEIN, and in DENMARK, to the C.-in-C. 21 Army Group.
This to include all naval ships in these areas
These forces to lay down their arms and to surrender unconditionally.
2. All hostilities on land, on sea, or in the air by German forces in the above areas to cease at 0800 hrs. British Double Summer Time on Saturday 5 May 1945.
3. The German command to carry out at once, and without argument or comment, all further orders that will be issued by the Allied Powers on any subject.
4. Disobedience of orders, or failure to comply with them, will be regarded as a breach of these surrender terms and will be dealt with by the Allied Powers in accordance with the accepted laws and usages of war.
5. This instrument of surrender is independent of, without prejudice to, and will be superseded by any general instrument of surrender imposed by or on behalf of the Allied Powers and applicable to Germany and the German armed forces as a whole.
6. This instrument of surrender is written in English and in German.
The English version is the authentic text.
7. The decision of the Allied Powers will be final if any doubt or dispute arises as to the meaning or interpretation of the surrender terms.

A. L. Montgomery
Field-Marshal

** May 1945*
1830 hrs

THIS IS a reproduction of one of the pages contained in the copy of the articles of surrender signed by the representatives of the Allied Nations and of Germany and Japan. A copy of these articles was presented to the Commission along with the Victory Loan flag.

Handwritten signatures and initials:
✓ *... de B...*
✓ *... ingel*
... August
... A...
... Stahl



DIRECTING ATTENTION to the Commission's plans for more extensive rural electrification, the above display has been featured, during recent months, at a number of rural fairs and exhibitions throughout Ontario. The thousands of visitors who viewed the exhibit expressed keen interest in the electrical equipment on display, including motors, water pumps, milking machines, milk coolers, pig brooders and refrigeration units. The display cards stress the need for adequate wiring and illustrate economies in time, labour and expense effected by electrified farming.

A-TISKET A-TASKET"

(Continued from page 15)

tools. Under this head there would be literally scores of different items. There are very few parallels to this breadth of purchasing contacts and the department is often referred to for advice and information by other firms.

Another reason the department feels itself unique is that as a service department it touches every phase of Hydro life. It must be on its toes, always ready to give quick and expert service and to fill unusual orders or deal with emergencies. Also because of its wide business contacts it has an unusual opportunity to foster cordial public relations.

When the department was set up at the formation of the Hydro Electric, there was very little pattern to go on. It had to be developed slowly and by the trial system. From the original staff of two it has grown to the present staff of twenty-eight. B. O. Salter, the head of the Department, has been identified with it since 1911. H. W. Beck, second in command, has been in the department for twenty

three years. Apart from the department itself there are allied with it, the printing and stationery departments. The department is proud of the fact that it operates at a cost of approximately one per cent of the total money spent.

In the hunt for materials, the department says that its biggest single aid is the telephone. Most of the preliminary enquiries can be done by this method. Especially since a large percentage of everything bought is from the province. Then too, there is a daily list of callers, representatives of firms, who can write out their quotations on the spot and so save a lot of time. When there are contracts of course there are formal letters and in any of the more important purchases sealed tenders are used; but whatever the means, impartial treatment is ensured.

The purchasing department considers itself, modestly, as a hum-drum and routine affair. But the rest of the Commission agrees that without that capacious and dependable shopping bag, the Hydro system would be in a bad way indeed.



HEAD TABLE guests at the annual dinner of The Ontario Hydro-Electric Club, horticultural section, were in the happy frame of mind that accompanies good food and fellowship. They are: (top, from left to right) J. J. Trail, E. T. Ireson, Mrs. J. J. Trail, H. R. Hill, Mrs. W. H. Carr and W. H. Carr. Lower, left to right, A. B. Hayman, Jack McTavish, Mrs. E. V. Butt, E. V. Butt, Mrs. E. T. Ireson and the speaker of the evening, L. L. Snyder.

"STUFFED BIRDS" PRESENT AT HORTICULTURAL MEETING

A COLLECTION of "stuffed birds" was present at the annual dinner meeting of the horticultural section of The Ontario Hydro-Electric Club on November 23.

The collection in question was the property of L. L. Snyder, curator of birds and assistant director of the Royal Ontario Museum, who was the guest speaker and whose informative address dealt with the not-too-well-known habits of Ontario birds. Among other things, he pointed out that the banding of birds had provided more data on

migration than had been gleaned from any other source.

During the evening, prizes won at the various shows throughout the year were presented and later photo-chromic slides were shown that had been reproduced from pictures taken in the gardens of J. E. Murton and E. T. Ireson, two members of the club.

All the officers of the club were elected by acclamation for the coming year. They are: president, E. V. Butt; vice-president, Miss E. M. Grader; secretary, Fred Corin; treasurer, J. J. Trail; directors for a two-year term: A. H. Sharpe, J. C. Murton and J. A. MacLaren; for one year, C. J. Vick, J. McTavish and E. T. Ireson.



WERE YOU there? If so, take a look at these two shots taken during the evening. The upper reproduction takes in one section of the gathering, and the lower is a general camera impression from the stage of the Central Y.M.C.A. auditorium.

Santa's Here!



UNAWARE THAT their photograph was being taken, these children were "all eyes" as they were caught by the photographer who was just outside the window from which they were looking. Santa Claus and his reindeer: Dancer, Prancer, Dasher, Vixen, Cupid, Comet, Donder and Blitzen had the kiddies' undivided attention at this point which marked the climax of a memorable day and a great parade.

THERE was a feeling of expectancy and excitement in the air that November morning. From north, south, east and west they came—thousands of children thronging to welcome the arrival of Santa Claus in Toronto. And at 620 University Avenue, The Hydro-Electric Power Commission of Ontario was holding traditional open-house for employees' children.

By nine o'clock every available vantage point on the east side of the eighteen-storey administration building was filled with kiddies, while the entrance lobby was like a school yard at recess time.

Little girls were very thrilled at finding so many new friends who readily admired their gowns, while little boys were more or less content to divide their time between the drinking fountains and trying out for size, various office chairs.

Toddlers, who were not quite aware of the importance of the occasion, were, nevertheless, wide-eyed with the excitement that comes from being in different surroundings and receiving so much attention from interested strangers.

Looking out on the avenue, the crowd were seen to have already lined up on the boulevards. Normal traffic had been re-routed and policemen on motorcycles or horses made endless precautionary patrols up and down near the curb.

As the zero hour approached—Santa has a reputation for being on time—there was a rush for the windows and little faces pressed against the panes. Suddenly, from away

up the avenue, came the sound of martial music.

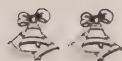
"Here he comes!" shouted a little boy, and there was a chorus of excited shouts as they saw the first of the Fairyland folk, who had stepped out of the story book covers for the day, come into view, riding on glittering floats.

The shouting seemed to reach new crescendos as the colourful panorama of frolicking clowns and dainty fairy folk passed down the avenue.

There was Goldilocks followed by Papa Bear, Mama Bear and Baby Bear. Soon after that came the "Hey Diddle Diddle, The Cat and The Fiddle" float which portrayed a big papier-mâché cow in the act of jumping over the moon. Behind this was the little dog who "laughed to see such sport" and a giant platter with its hand extended clutching the hand of the spoon in the true tradition of the narrative.

The children just loved the beautiful golden coach, complete with green-liveried footmen—the coach in which Cinderella was riding to the ball where she was to lose that never-to-be-forgotten glass slipper. The continual stream of floats, jesters, clowns and "Christmas Belles" which followed created a carnival-like atmosphere which seemed to animate the crowded avenue and reach the children in the Commission building.

Finally, still preferring to drive his eight reindeer in spite of the splendid aeroplane that had been offered him by the minister of transport, came Santa Claus himself—and the greatest crescendo of all from the children.



THESE OUT-of-proportion, clown-like characters (upper left) are doing a "snake dance" down the avenue, giving an effect of large scallops to those looking down from the upper floors. The kiddies looking out of the window at the parade are: (top right) Daphene Kewin, Jack Harmer, Brian Foote, Freddy Douglass, Joyce Hillier, Bob Harmer and John Hickey.



ONE OF the attractive "Christmas Belles" (centre) pauses to shake hands with the warmly-dressed kiddies who are watching the parade from the street. The youngsters (bottom left) were waiting in the lobby of the Commission building for the excitement to commence. After the parade, these kiddies (bottom right) were apparently quite reluctant to leave.



Lighter Lines



"I hate to interrupt this marvelous stream of advice, Dear, but something's burning on the kitchen stove!"

The surgeon had just completed an appendectomy when a fire broke out in a building opposite the hospital. As the flames grew fiercer, the nurse moved to the window.

"I think I had better draw the curtains," she murmured to the doctor. "If the patient awakes, he may think the operation has been unsuccessful."

A magazine writer comes to the aid of the punster. Says this writer: "Don't be ashamed of a pun if it is good. The simplest form of comeback is the much-vilified pun." He, however, urges the beginner to do a little practising by himself and invent situations. Imagine, say, that a waiter had brought him stale bread. What might he remark? Possibly: "Now, waiter, that is not well bread." It really takes a touch of genius, however, to reach the point where one can double pun. Take for instance the remark of the gentleman who, after hour upon hour of terrible cards in an all-night session, announced sadly that he was being trey-deuced!

Atomic energy, scientists claim, is destined to prove the most revolutionary factor in the history of mankind. A warning note, however, is sounded by a famous physicist. If the new power is not carefully handled, the earth may suddenly be converted into an indescribably brilliant star. Perhaps this is what the optimists have in mind when they expatiate upon the prospects for a brighter world.

Harrier races are said to be retaining all their old time popularity in England. And we suppose England's enemies will still go on accusing her of running with the hare and hunting with the hounds.



"Pretend you don't notice him, dear!"

DOWNWORDS PUZZLE

LAST MONTH'S SOLUTION

1	2	3	4	5	6	7	8	9	10	11	12
F	E	R	G	U	S	O	N	V	A	L	E
R	M	E	R	N	I	C	U	I	N	A	V
E	A	F	A	D	M	C	M	C	N	N	E
E	N	R	N	E	O	U	I	T	O	C	R
H	C	I	D	R	N	L	S	O	F	A	L
O	I	G	E	T	L	T	M	R	C	S	A
L	P	E	A	A	E	A	Y	L	T	S	
D	A	R	R	K	G	T	T	L	E	R	T
E	T	A	M	E	R	I	I	O	V	I	
R	O	T	E	R	E	O	S	A	E	A	N
S	R	E	E	S	E	N	T	N	S	N	G



"Find out if his terms are still unconditional surrender!"

Two women were shopping in the toy department of a big city store.

"I like to keep up the Santa Claus legend," one of them remarked. "but Bobby is becoming increasingly suspicious. Do you know, he asked me how Santa could go down so many chimneys at the same time."

"Well, my dear," said the other, with her sweetest smile. "Really, I don't see how a question like that should bother you. It is common knowledge that your husband is often working late in the office and out at a poker game on the same evening."

The suggestion of an experienced bee-keeper that he install hives on farms in suitable locations in Ontario has, we are told, been received with enthusiasm, especially in the Tara d'strict where there is aid to be an abundance of choice clover. With the sugar shortage as serious as it is and honey at a premium, we hope that we shall soon be able to paraphrase an old song and write: "Tara ra ra booms today."

#his and #hat

BY THE EDITOR

"DO YOU believe in Santa Claus?" This was the question we put to twenty people during the past few weeks—and we weren't trying to be facetious. Four replied emphatically in the negative; three questionees became somewhat embarrassed, sidled nervously towards the door and then made a hurried exit; eight said that they would like to think there is a Santa Claus and of the five, who replied in the affirmative, one,



an elderly gentleman, said that he hoped the time would never come when he had any doubts on the question.

The results of this survey, silly as it may appear at first glance, were very interesting to us at this particular time when we hear a great deal about peace and goodwill on the one hand, and so much about distress and international suspicion on the other. We may be wrong, but it seems to us that if there are men and women throughout the world who still have time for Santa Claus and sentiment then there is hope for enduring peace among the nations of the world.

Incidentally, we think that piece on Santa Claus on the outside back cover of this issue is one of the finest things we have ever read.

* * *

IN THE next issue of Hydro News we plan to recount interesting experiences at Rat Rapids, Hudson and other points visited during our trip in Northern Ontario—"North Of The Fiftieth Parallel."

WHILE HUMOUR has no place during a solemn event, whimsical little incidents frequently temper the solemnity of such an occasion. There was, for example, the incident which occurred not so long ago, an incident which, we understand, a number of Hydro people witnessed. The event took place in front of a cenotaph and when the moment arrived for an official to place his wreath, he discovered that it had been left behind. Noting the official's predicament, a resourceful colleague slipped to the back of the cenotaph, took one of the wreaths, which had been laid earlier that day, and placed it in the hands of the official who, without batting an eye, laid it on the memorial and an embarrassing situation was averted. As quickly as possible, the missing wreath was retrieved and, at a propitious moment, laid in the place of the borrowed garland which was returned to its original position.

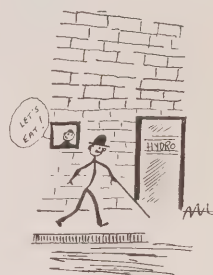
* * *

THERE IS also another incident which actually occurred—one which might be described as both "unfortunate" and "whimsical." While the story is often recalled when newspapermen and magazine editors and writers get together, names and places, naturally, cannot be published. A widely-known writer and scholar, who lived alone, suddenly passed away. An out-of-town relative arrived to attend to the necessary arrangements. The remains of the distinguished gentleman were cremated and placed in an urn which was suitably packaged. In leaving town, however, the relative, inadvertently, left the urn on a seat in a railway station. For some time, mystery surrounded the whereabouts

of the remains which were eventually recovered to the great relief of all concerned.

* * *

HERE IS a little story—a true story—which we feel is too good to keep to ourselves. It might be called: "When Time Didn't March On." It happened two or three years ago at a Hydro office in a small Northern Ontario municipality. There was no clock in the office and no one on the staff had a watch. As a result, it became the established practice to watch for the passing of a gentleman described as "a stalwart, precise and very punctual citizen" who, exactly on the stroke of twelve each day, would pass the Hydro office. His appearance was the immediate signal for the members of the staff to reach for their coats and hats and go out for lunch.



One day, however, an untoward and rather disquieting incident occurred. The gentleman did not appear at the appointed hour. The members of this Hydro staff, however, being loyal to their human timepiece and, despite increasing pangs of hunger remained on the job and asked no questions until darkness began to fall. It was then decided that appropriate steps should be taken to investigate the incredible lapse, and it was learned that their timepiece had become run down and things were not ticking as well as they might be with him. Briefly, the gentleman was ill. Their faith somewhat rudely shaken in humanity, the members of that Hydro staff decided to buy a clock.



Hydro HOME FORUM

by *Edithemma Muir*
HOME ECONOMIST

THIS Christmas, the first after six long, bitter years of war, holds a special significance for all home-makers.

The women of Canada, and of every country, have a very special part to play in fashioning a fine world—a world in which a structure of permanent peace, happiness and prosperity must be built upon a foundation of goodwill and mutual co-operation.

Throughout the year, and particularly at this season, the home exercises a far-reaching influence upon the thinking, the conduct and the life of the individual, and the home is an expression of a woman's character.

To that little thought we would like to add our sincere wishes to all our readers for a Christmas filled with happiness and a New Year which will be brighter than any that have gone before.

* * *

And now let us pass on to you a few thoughts about the Christmas breakfast.

Chilled Grapefruit: Sectioned and garnished with a maraschino cherry.

Cooked Cereal: Sprinkle a little citron peel over each serving and serve with thin cream.

Creamed Livers: Sauté strips of green pepper or green celery stems, add to a basic cream sauce; stir in diced cooked chicken or turkey livers, trimmed neck meat and sliced hard-cooked eggs. Serve on toast.

Hot muffins with honey or scones and marmalade, or split doughnuts with jelly, or Christmas coffee roll and maple butter.

Hot chocolate with a dash of vanilla or hot coffee.

HOLIDAY SHORT CUTS

Pour boiling water over pecans and let them stand till cool; hammer on the small end to extract the kernel whole.

Never beat egg whites in a tarnished aluminum utensil, as it will darken egg whites.

If you have not the required cornstarch on hand for a recipe, use pastry flour, substituting $\frac{1}{3}$ cup flour for $\frac{1}{2}$ cup cornstarch and a little more fat if necessary.

A jelly roll cake can always be made without any fat when so much butter is being used for sandwiches.

Green bananas will ripen in a day if left in a paper bag in a dark warm place.

Steamed pudding reheats quickly if wedges in the serving sizes are placed cross wise in a dish covered with wax paper in a pan surrounded by rapidly boiling water.

When baking rolls or coffee cake, place a small tin of water in the oven to prevent the forming of a hard crust.

Grape juice and a bit of stick cinnamon in hot chocolate makes a pleasing holiday drink.

Orange rind and marshmallows in coffee make guests forget about sugar and cream.

Attractive gelatine and tossed salads make a difference on special occasions. Make a moulded salad in a cake pan, then shape by cutting it in a design of a star or bell. Keep left over pieces in electric refrigerator for another meal to top a tossed salad made of shredded greens and spiced vegetable juice.

Grease should be wiped from pans and crockery with a spatula; less soap-powder is needed for washing.

Heat a cake pan slightly before greasing, less fat will be needed.

Instead of greasing the baking sheet for pastry, biscuits, scones and rolled cookies, simply flour it.

Most flavouring extracts are now synthetic oils which combine well with fat. Flavouring, then, should be put in with the fat as the first step in mixing.

In slicing hard cooked eggs, dip your stainless knife in cold water and the yolks won't crumble.

The butter quota should be watched. Beat the butter which has been left at room temperature for 2 hours and add 1 pint of milk slowly while beating. Store in the electric refrigerator.

Vinegar left in pickle bottles can be used as flavouring in cooking mutton, or in strong soup.

Yolks of eggs should be poached and crumbled into sandwich fillings.



THIS LOOKS like one of these Christmas card settings. It's a nice sample of the photographic skill of Charles J. Drew, Toronto District operating supervisor of The Hydro-Electric Power Commission of Ontario. He got this shot from a window of the control room which is located on the second storey of Hydro's Leaside transformer station at midnight—just after the memorable snow-storm. In the foreground is the drive on the side of the control building and at the back is seen the oil breaker housing. Mr. Drew found himself marooned by the snow and prepared to spend the night in the building. About midnight he set up his camera on a table and took this picture through the glass of one of the windows. His car can be seen at the left bottom corner.

Three weeks later it was still there!

S. M. RICHARDSON PASSES

STANLEY M. RICHARDSON, for 34 years an electrical engineer with The Hydro-Electric Power Commission of Ontario, died on December 5 at his home, 209 Dunn Avenue.

Born in Ingersoll in 1888, Mr. Richardson received his education there and later at the University of Toronto where he took his degree in electrical engineering. He joined the Commission in May, 1911, was back at school for a short period and then came on the staff permanently in May, 1912, starting in the power billing division of the operating department.

He was a member of the American Institute of Electrical Engineers and the Ontario Professional Engineers. An active sportsman, he was associated with the old Parkdale Canoe Club, played a good game of tennis and played on a Commission hockey team that took part in inter-departmental series.

Surviving are his widow, two sons and a daughter. The funeral was held from the Church of the Epiphany in Parkdale on December 8 with interment in Park Lawn cemetery.

DONAT LEO REGIMBAL, aged 55, a member of the North Bay Hydro-Electric Commission, died suddenly on November 11, just after he had returned home from church.

A native of Azilda he had been identified with the local commission from its inception in 1941, and had served as chairman during 1943 and 1944.

A member of a pioneer family, who were among the first settlers in the Sudbury district, he started work as a young lad in Sudbury in the grocery business. With the passing of time, he was engaged in other pursuits, which brought him into contact with the hotel, newspaper and other fields.

Mr. Regimbal, who took an active part in civic affairs, was prominently identified with the crusade which culminated in the city of North Bay purchasing the local distribution system from The Hydro-Electric Power Commission of Ontario.

Surviving are his widow, seven sons, five daughters, six brothers, and four sisters and two grandchildren.

Interment was in the family plot at St. Mary's cemetery.



DAY-ZHOAH-SHEHYM!

By Cecil Carrick,
Legal Department, H.E.P.C.

HAVING rashly accepted an invitation to contribute information which may be useful in settling the outstanding controversy as to the proper pronunciation of the site of the Commission's latest development project, we offer the following without prejudice.

As the day approached for the introduction into the Legislature of the bill now enacted as "The Ottawa River Water Powers Act, 1943" the Honourable Gentleman who, as head of Government, was to introduce it, requested a ruling respecting the pronunciation from some authoritative source. We could not find it in our heart to pass on the weird effect of "dah Swisha" which some of our Hydraulic friends had insisted upon repeating from time to time in their best Hawkesbury French. We communicated with L. P. Pigeon, K.C., Legislative Counsel of the Quebec



Legislature, who is not only a profound constitutional lawyer but also a member of the professorial staff of Laval University and an outstanding product of the classical higher education of Quebec. Mr. Pigeon answered as follows:

"I have your telegram asking me to indicate phonetically or otherwise the proper pronunciation of 'Des Joachims'.

"After going over all the pronouncing dictionaries we had here and discussing the matter with my English-speaking colleagues, I am obliged to tell you this is an impossible task because the pronunciation of the last syllable has neither equivalent nor approximation in any English word. The closest approximation we can suggest is as follows:

'DAY-ZHOAH-SHEHYM'

"Zh, is to be pronounced as 'z' in 'azure'. In the last syllable, the 'm' is almost completely silent so that this last syllable should sound like a kind of compromise between the pronunciation indicated above and 'shei-ei' being pronounced as in 'leisure'."

Pronunciations Varied

It is with regret that we report that when the time came to debate the bill on its second reading its sponsor forgot Mr. Pigeon's admonitions and as his example was followed by the other honourable members, the pronunciations were as varied and wide of the mark as some of the arguments.

The problem of pronunciation having been thus disposed of, perhaps someone may be inclined to imitate the visiting Englishman who asked the New Yorker, "What are Yonkers?" and enquire "What, or who, is or are Joachims anyway?" The plural form being used you will presume that there were more than one. In fact there were two. We know that in 1853 the site was known as "Les Rapides des Deux Joachims". The Joachims were

Grand "Opening" at Christmas

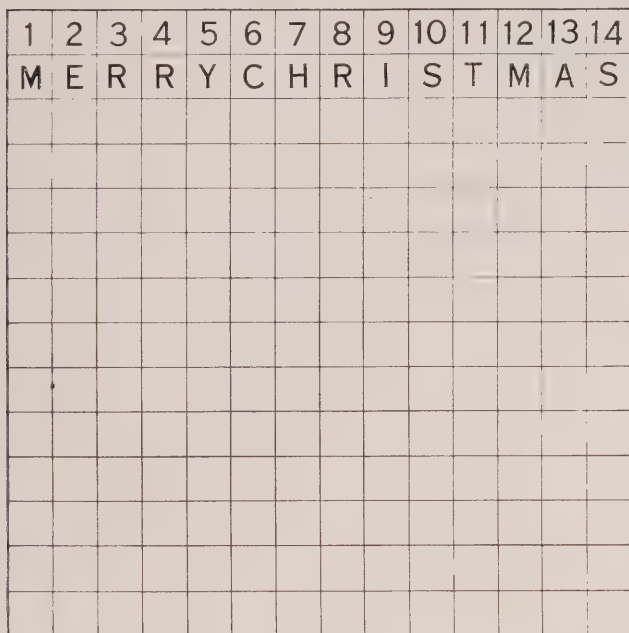
By Harry M. Blake, Hydro News

WHILE the children were shouting with joy at the tree

We stole to the living room—Jenny and me—
To open our presents—all stacked in a pile,
So snugly they fitted, we both had to smile.
"It's the shortage of cardboard," my wife gaily cried.
"They all look alike—they'll be different inside."
She opened a parcel. "How lovely of Joan!
There's powder and lipstick; oh, dilly, cologne!
What's in yours, George?" she asked. "Don't rip it like that.
I can use those red ribbons for trimming my hat."
"It's a necktie," I told her, "the colours I like.
John has taste, I can tell you. What's this one from Mike?"
'Twas a tie with the polka dots just like the other.
But two's not too many. Oh, here's one from mother.
A pattern quite different but still just a tie.
Jenny sighed: "I'll have powder to last 'till I die."
More ties as I opened up box after box—
With just one exception—a pair of blue socks.
Then Jenny turned to me—her face glowed with love—
"Now your present to wife I'll open, my dove."
I knew what it was—and I'd just seen my own.
I wished we had both purchased more Victory Loan.
I set down HER necktie. My wife turned away.
"Let's go back to the kiddies. It's THEIR Christmas Day."

brothers and they owned land in the vicinity. Whether they were born there or settled there in adult life, whence they came and whither they went we do not know. Joachim is usually a Christian name, but as these men were brothers it must have been their last name. Perhaps one of them called himself "Swisha". If so, he was the black sheep of the family, the prodigal son, not like his steady brother "Shoah-Shehym" with the last syllable pronounced by way of a kind of compromise between "Shehym" and "Shei" as in "leisure". He probably developed gastric ulcers from drinking whiskey blanc and died, unwept, unhonoured, and unsung, but immortalized by his name echoing up and down the river, as it admittedly does, as a horrible example—of mispronunciation.

About the Oiseaux rock at the foot of "the Deep River", which leads to Des Joachims there clings the legend of "The Squaw's Leap" from the overhanging wall of rock nearly eight hundred feet in height. In the strictest confidence we suggest that "Swisha" was the perfidious lover involved in this melancholy episode, and so it is that in the northern night beneath the frosty stars, when all is so quiet that one can hear the tiny feet of the little forest animals, which leave their faint tracks on the hard crust of the winter snow, stirring in the cold light of the ever-advancing, ever-retreating northern light, there will drift down the valley the mournful cry "Dah Swishah, Dah Swishah" followed by mocking laughter, and Dick Hearn and Otto Holden, far away in their cosy beds, will start in their sleep and mutter those specifications for "Dah Swishah, Dah Swishah, Swish—ah-ah—."



“LOOK who’s here!” cried somebody at just a few minutes past ten o’clock on Saturday, November 17. Professor Peter Perplexus rushed to the window just in time to catch a glimpse of Santa Claus as he drove by in his sled. That gave him the idea. Why not run “Merry Christmas” as the key word for the Downward Puzzle in the December issue of Hydro News? That would be his greeting for everybody, and it would save him not inconsiderable trouble of selecting several thousand Christmas greeting cards for downwords fans. “So there you are,” chuckled the Professor, trying to smooth his beard into some semblance to Santa’s facial adornment, “‘Merry Christmas’, and it’s a nice little stocking I’m filling for young and old.”

DEFINITIONS

1. A man who can't see any good in his fellows even on Christmas day.
2. In spite of its name, it is cultivated in California. It used to be associated with Santa Claus stockings and dessert, but it hasn't been seen much in recent years.
3. How the star which guided the wise men on that first Christmas morn shone forth in the heavens.
4. A porcine substitute for roast turkey. Good, too.
5. Bread without water. (3 words).
6. They will ring carols during the Christmas season. (2 words).
7. The old song returned men are singing this year.
8. In the Toronto climate it can do any one of these three things on Christmas day. Here is hoping it will do the last.
9. Name for the highly spiced and seasoned foods we all eat too much of at this season of the year.
10. If boys and girls exercise a little of this, they will be saved from discomfort after the Christmas dinner.
11. With beeswax at a premium, these tapers will be used for lighting at most Christmas tables this year.
12. Giggling young ladies at Christmas parties struggle ineffectually to avoid this time-honoured caress. (2 words)
13. These poor fellows never enjoy a white Christmas.
14. Alternative name for the man who comes down the chimney.

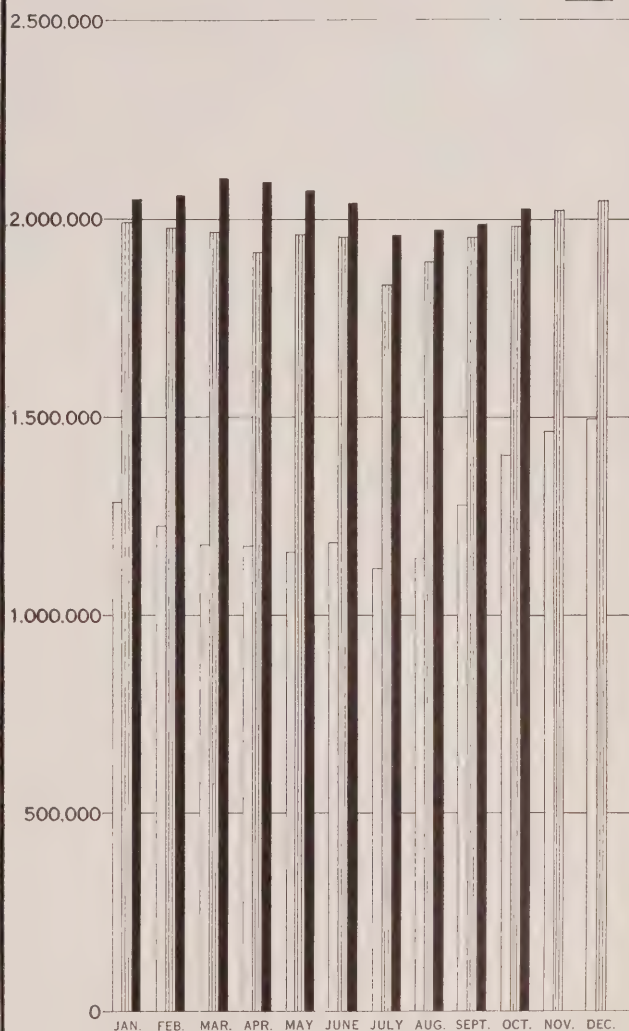
SOUTHERN ONTARIO SYSTEM

EMBRACING NIAGARA, GEORGIAN BAY AND EASTERN ONTARIO
DIVISIONS

PRIMARY LOAD

HORSEPOWER

1945
1944
1939



PRIMARY LOADS

AREA SERVED BY	MAXIMUM 20-MINUTE PEAK H.P.		PER CENT INCREASE
	OCTOBER, 1945	OCTOBER, 1944	
SOUTHERN ONTARIO SYSTEM	2,027,361	1,981,428	+ 2.3
THUNDER BAY SYSTEM	124,397	122,252	+ 1.8
NORTHERN ONTARIO PROPERTIES	212,673	192,075	+ 10.7
TOTAL	2,364,431	2,295,755	+ 3.0

PRIMARY AND SECONDARY LOADS

SOUTHERN ONTARIO SYSTEM	2,177,763	2,043,646	+ 6.6
THUNDER BAY SYSTEM	136,863	127,212	+ 7.6
NORTHERN ONTARIO PROPERTIES	<u>285,247</u>	<u>245,299</u>	<u>+ 16.3</u>
TOTAL	2,599,873	2,416,157	+ 7.6

Is There a Santa Claus?

This editorial, which has justly become timeless, was written in the New York Sun in 1897 by Francis Pharcellus Church in answer to a letter from a little eight-year-old girl named Virginia O'Hanlon who had been told by some of her friends that there was no Santa Claus.

Virginia, your little friends are wrong.

They have been affected by the skepticism of a skeptical age.

They do not believe except they see.

They think that nothing can be which is not comprehensible by their little minds.

All minds, Virginia, whether they be men's or children's, are little.

In this great universe of ours man is a mere insect,

an ant, in his intellect,

as compared with the boundless worlds about him,

as measured by the intelligence capable of grasping the whole of truth and knowledge.

Yes, Virginia, there is a Santa Claus.

He exists as certainly as love and generosity and

devotion exist, and you know that they abound

and give to your life its highest beauty and joy.

Alas! how dreary would be the world if there were no Santa Claus!

It would be as dreary as if there were no Virginias.

There would be no childlike faith then, no poetry, no romance to make tolerable this existence.

We should have no enjoyment, except in sense and sight.

The eternal light with which childhood fills the world would be extinguished.

Not believe in Santa Claus!

You might as well not believe in fairies!

You might get your papa to hire men to watch in all the chimneys

on Christmas Eve to catch Santa Claus,

but even if they did not see Santa Claus coming down,

what would that prove?

Nobody sees Santa Claus, but that is no sign that there is no Santa Claus.

The most real things in the world are those that neither children nor men can see.

Did you ever see fairies dancing on the lawn?

Of course not, but that's no proof that they are not there.

Nobody can conceive or imagine all the wonders there are unseen and unseeable in the world.

You tear apart the baby's rattle and see what makes the

noise inside, but there is a veil covering the unseen

world which not the strongest man, nor even the united strength

of all the strongest men that ever lived, could tear apart.

Only faith, fancy, poetry, love, romance, can push aside

that curtain and view and picture

the supernal beauty and glory beyond.

Is it all real?

Ah, Virginia, in all this world there is nothing else real and abiding.

No Santa Claus!

Thank God! he lives, and he lives forever.

A thousand years from now, Virginia, nay, ten times ten thousand years from now, he will continue to make glad the heart of childhood.

HYDRO *News*



POWER IN PERSPECTIVE

MAKING THE RIVERS *work for you!*

- A river near your home, or hundreds of miles away, is working for you. In its eager rush to the sea its waters drive huge hydro-electric generators. The power so produced can be yours to command, but only to the extent that you provide for it through ADEQUATE WIRING.

Electricity—the low-cost servant—floods a multitude of homes with cheerful light. Meals are cooked and food is preserved, rugs are cleaned and laundry is washed and ironed, radios entertain and educate, furnaces are operated and water is heated in modern homes everywhere. For those who welcome Electricity with adequate wiring, it enters to take on numerous tasks and bring uncounted comforts—and who can predict the limits of what it may do for you tomorrow!

Your Hydro brings this magic within your reach. How well it can serve you depends on how well your home is wired. Adequate wiring can be provided at an average cost of 3% of the value of the building. When building, buying or remodeling, it is genuine economy to wire for the needs of tomorrow. Your local Hydro will be glad to provide you with information.



THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO



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THE FRONT COVER



WHEN walking south
in Queen's Park in
Toronto, one can see the top
of the Administration Building
of The Hydro-Electric
Power Commission of Ontario
framed within the
stately arched entrance at
the west side of the
Parliament Buildings. This
month's front cover shows
a camera impression recorded
by J. H. Mackay of the
Commission staff.

Volume 33

January, 1946

Number 1

CONTENTS

	Page
Pritlove Pictures - - - - -	2
Page Three - - - - -	3
North Of The Fiftieth Parallel - - - - -	4
Good Street Lighting - - - - -	9
Hydro Girls Assist Santa - - - - -	10
Niagara Frequency Problem - - - - -	12
C.E.A. Medals Presented - - - - -	14
Winning Their Spurs - - - - -	15
Winter Conventions - - - - -	18
Adequate Wiring - - - - -	20
Aguasabon River Plant - - - - -	22
Getting The Drop On The Sawfly - - - - -	24
Lighter Lines - - - - -	28
This And That - - - - -	29
Hydro Home Forum - - - - -	30
Downwards Puzzle - - - - -	31
Monthly Load Summary - - - - -	31
Municipal Loads - - - - -	32





MOST PEOPLE who have seen a buzz bomb this close haven't lived to tell the story. This unusual picture (top left) was secured from a captured German officer. The bomb is taking its final dive, its motor shut off, over the city of Antwerp. This photograph, and other pictures on this page were made available to Hydro News by Sergeant Edward P. Pritlove, now with Listowel R.P.D.

THIS IS a Canadian army unit speeding along an arterial military "autobahn", one of many that the Germans built before the war. This particular road (top right) runs from Belgium into Germany.



AN INTERESTING landmark for a Canadian soldier to spot is the Duke of Wellington's Headquarters at Waterloo in Belgium (centre). The general spent the night here before the historic battle.

BOTTOM LEFT shows Trinity Sunday parade, June 3, 1945, making its way through the bomb-shattered streets of Antwerp where thousands of people were killed during the war.

OLD GUARD colour party is featured (bottom right) marching on the fields of Vimy at the Vimy day ceremony, April, 1945. They represent First World War veterans who were also fighting in this war.



NEW YEAR RESOLUTIONS

NEW YEAR is the recognized time for making resolutions, and this New Year, because we are entering upon a new era of reconstruction after long years of war, there will undoubtedly be more stock-taking and planning for the future than ever before.

Most of our New Year resolutions in the old peace days were of a personal nature. We kept them for a day, a week, or perhaps, in the case of the more resolute among us, for as long as a month before returning with a sigh—or even a gasp—of relief to our old ways of life. And the reason for this back-sliding is not far to seek. It is not in human nature to tolerate willingly a sudden break with established customs and habits, and unless there is some motivating force outside the lackadaisical incentive of our own ego, we are not likely to progress very far along the paths we have mapped out for ourselves.

After all, with what kind of resolutions have we largely busied ourselves? Have we been concerned with whether we should smoke four instead of five pipes a day; with whether we should take one instead of two cups of tea with our dinner; with whether we should do an "on the hands down" on arising or just before retiring? If we have, then this New Year we had better leave such matters to our own common sense, or, if need be, to the advice of our family physician, and direct our resolutions to more urgent and important objectives.

The job ahead of us, in a national, corporate and individual sense, is a gigantic one. We are called upon, and actually obligated, to assist not only in our own rehabilitation but in that of a war-worn and desolated world. In this respect, we are all in the same boat, and unless we pull manfully together on the oars, it is unlikely that we shall ever reach the shore.

The decision of Hydro to embark—as quickly as possible and in spite of many present difficulties—upon new power developments in the interest of increased industrial and community activities is an example of the Commission's resolution to unite itself with the national effort of rehabilitation. Each individual in the far-flung Hydro family will have a part to play in the elaboration of the design which electrical developments and extensions envisage. By determining to pull together we shall be making a worth-

while New Year resolution which will contribute to the recovery that is so necessary a foundation for peace.

LET THERE BE LIGHT

IT is a matter of grave concern not only to law enforcement agencies, but to all responsible Canadians that traffic accidents continue to take an ever-increasing toll of human life and that crime and violence against humanity are in evidence on every hand.

It is highly significant that most of the serious accidents take place at night when many of the worst crimes are also committed. A number of interesting conclusions can be drawn from these facts. For instance, as George Cousins, the Commission's supervising lighting engineer, emphasized in a recent address before the Toronto chapter of the Illuminating Engineering Society, two-thirds of the street accidents occur at night when only one-third of the traffic is in operation.

Mr. Cousins' observations clearly indicated the importance of good street lighting in relation to the safety of pedestrians and to the safe operation of automobiles and other traffic at night. It requires little imagination to realize that with new cars now rolling off the assembly lines these conditions will become progressively worse unless all communities and the citizens in these communities become more safety conscious in deed as well as in word.

The many communities which are already implementing post-war plans for the adequate illumination of their areas, are to be highly commended. As Mr. Cousins has pointed out, night traffic accidents are definitely proportionate to the adequacy of the lighting. Furthermore, good street lighting is good business which is reflected in lower automobile insurance rates and in the indirect but important benefits it brings to the merchants and citizens of a community.

Hydro, which made an outstanding contribution to the winning of the war, can now be harnessed not only to further raise the standard of living of the people of this province but also to provide the maximum of protection for citizens of every community in which the benefits of Hydro are available.

Let there be light.



SECOND ARTICLE

*By The
Editor*

THERE must be many people who have walked on Ontario gold without having been aware of the fact, especially in the area of Red Lake, a name which is synonymous with some of the richest "strikes" of modern times.

This was but one of a number of interesting impressions formed by Hydro News upon the occasion of the recent visit to this mecca of mining where Hydro is doing an outstanding job in helping man extract and process the riches which are embedded in the dark, rocky depths of this Eldorado.

While walking on gold does not give one that "walking on air" feeling (unless the individual holds the claims!) it is, none the less, an interesting experience. One day, while on a tour of the Red Lake district, Hydro News saw many claims that had been staked and was informed that, some day, one or more of these properties might prove to be "big name" gold mines. Mines, which are now in operation, and which we visited, included McKenzie Red Lake, Hasaga, Couchenour-Willans, Madsen, Central Patricia and Pickle Crow. To read about the operations of these mines in the financial columns of the daily press is one thing but to see them at first hand and, in actual operation, gives one an entirely new and broader perspective on the whole gold mining business.

There are few people, who are engaged in this business, who will not readily admit that this quest for gold is something of a gamble although science has helped re-

move much of the guess-work. The impression formed by Hydro News from conversations with men who are recognized authorities is that while there may be indications of gold it must be first determined, through diamond drilling, that there is high quality ore and enough of it to make it worth while to go ahead with the sinking of a shaft. These preliminary operations, naturally, represent a considerable investment in both time and money but a far greater investment is involved when mining interests sink a shaft, construct a mill with all its essential equipment and, at the same time, establish a community complete with homes, stores, and the necessary recreational facilities for several hundred employees.

A Spirit of Confidence

A mining community has an atmosphere all its own. Its inhabitants know that their stay is determined by the life of the mine itself which may be twenty, thirty, or fifty years—possibly more and possibly less. However, the factor of "duration" does not appear to be one of paramount importance in the lives of these people who have discovered not only gold but happiness, health and prosperity in Ontario's truly great North Country which is still very young. In their daily lives, these people seem to give expression to that spirit one discovers throughout this country—a spirit of confidence in this province and in Canada's future, a desire to give a fair day's work for a fair day's pay and the right to enjoy to the full the kind of freedom which only true democracy can offer.

The first community visited by Hydro News was that of McKenzie Red Lake where we obtained accommodation at a hostelry known as the Gold Eagle Hotel, McKenzie

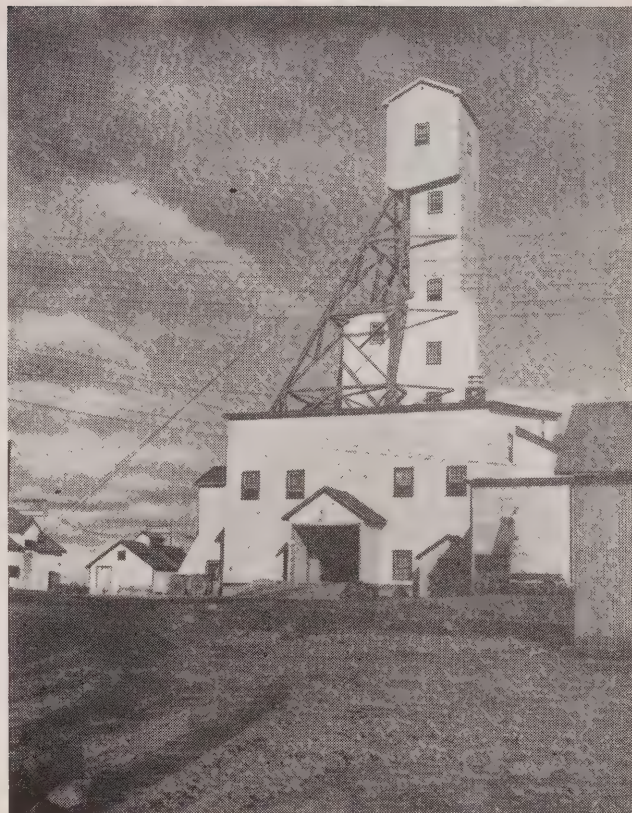
Island. This northern inn is "long" on good food, friendship and spic-and-span accommodation, but rather "short" on certain facilities which contribute much to the comfort of life and living. Rising one morning at what would be generally regarded as an early hour—6:15 a.m.—Hydro News donned the bathrobe and reached for a towel, then opened the bedroom door. With the idea of determining specific directions and locations, we peered out to the left and saw two eager-looking faces hastily withdraw to their respective boudoirs and we were just in time to see another head disappear to our right.

Took Up Watching Position

It was a situation that prompted meditation. Next, we listened intently and could hear the sound of ablutions coming from a room diagonally across the narrow hall. We laid down the towel and took up a watching position at the bedroom door. At last, there was the encouraging sound of a latch and we ducked back and reached



MEET THE HATTIES. Stepping out of their lovely home at Pickle Crow, Mr. and Mrs. A. G. Hattie faced the Hydro News' camera for this informal photograph. Mr. Hattie is Director of Mining for the John E. Hammell mining interests and manager of the Pickle Crow gold mine.



MINE BUILDINGS look very striking against the deep blue of a Northern sky on a day when there are clouds or at sunset. This is an interesting shot of a part of the structure of the gold mine at Central Patricia.

for the towel but just as we were about to step into the hall, there was a flash of pajamas, flying bathrobe and towel before our eyes as a gentleman two rooms down managed to reach the desired haven a fraction of a second before another competitor from the other end of the hall. Somewhat disgruntled, the latter gentleman opened the door marked "ladies" and disappeared inside.

Vigil Crowned With Success

The problem was one that demanded both foresight and enterprise. Hydro News, therefore, walked out into the hall and sat down between the two doors, the vigil being eventually crowned with success—even if it were the wrong room!

Having shaved, bathed and eaten one of these appetizing northern breakfasts, Hydro News stepped out into the clear, crisp morning air and made a round of the community which is made up of little, white frame homes that are built to withstand the rigors of the northern winter. These are happy little homes, some of them being in gossiping distance of one another, and most of them bearing testimony to the fact that their tenants are lovers of flowers and animals.

Later in the day, Hydro News visited the fine looking mining property operated by Couchenour-Willans where we were conducted on a tour of inspection by manager



WHERE J. L. RAMSELL, manager of the McKenzie Red Lake gold mine, goes his dog goes also. He was swinging along the road en route to his office when Hydro News got this interesting shot.



FROM THIS photograph, taken at the Couchenour-Willans property in the Red Lake area, one can form an impression of the fine gardens which have been developed in that mining community.

were many other interesting features at this property. For instance, Hydro News saw both the Hudson's Bay store and the fine home which that company has provided for its employees. Then, there were the gardens. And what gardens they were! Some of the finest specimens of flowers and vegetables seen by Hydro News were to be found in this thriving community of hard-working folk who have found a way of life that is to their liking in Ontario's rugged North Country.

Rendezvous Of Mining Folk

Earlier in this article references were made to the Gold Eagle Hotel at McKenzie Island. Before leaving this centre

(Continued on page 8)

W. P. Mackle and assistant manager S. W. McNeil. At this property, which is about a mile across Red Lake from McKenzie Island, Hydro News had the opportunity of seeing the interiors of some of the miners' homes. A number of these dwellings are of the pre-fabricated type and are compact, well-planned and completely equipped with all modern facilities, including up-to-date kitchens and bathrooms.

Special Playground Area

Of particular interest in this well-organized community are the excellent, supervised playground facilities provided for children of the kindergarten age. Management of this mine have set aside a special area which is completely fenced in and which includes a small building equipped with all kindergarten facilities and where the children are under the eye of an experienced teacher. There



MEET W. P. MACKLE, manager (left), and S. W. McNEIL, assistant manager, of the Couchenour-Willans gold mine.



LIKE AN avalanche let loose suddenly the boys and girls at the Pickle Crow school swept down the stairs in the background and lined up to watch with interest while Hydro News took this photograph. All these kiddies looked husky, healthy and happy. From their ranks may come some of the great Canadian leaders of the future.



THESE LITTLE students at the Pickle Crow school were quite thrilled when they were asked to come to the front of the classroom and stand beside Miss Rose Mary Gobbo, their teacher, while Hydro News got this photograph.



THESE KIDDIES were playing in the supervised playground area when Hydro News visited the Couchenour-Willans property where one finds many attractive homes and gardens and a fine community spirit.



THERE ARE 18 boys and 19 girls at the Pickle Crow school, their ages ranging from 6 to 16. This mining community school provides a curriculum of study up to the tenth grade. The teacher, Miss Rose Mary Gobbo, is shown at the back of the room.



ANOTHER STRIKING close-up shot of a mine structure was obtained at the Couchenour-Willans property (above) which is located about a mile across the lake from McKenzie Island. Many of the Red Lake properties are in relatively close proximity to one another.

(Continued from page 6)

of hospitality which is a rendezvous of mining folk for miles around, Hydro News experienced something of that spontaneous and sincere friendship for which the people of the North are noted. The event in question took the form of a special dinner tendered by the mine managers and other mining officials.

A Meal To Be Remembered

Those in attendance included A. E. Pugsley, manager of Hasaga, and his wife; J. L. Ramsell, manager of McKenzie Red Lake, and his wife; W. P. Mackle, manager of Couchenour-Willans, and his wife; E. G. Crayston, manager of Madsen Red Lake, and his wife. The following were among the Hydro personnel in attendance: William (Bill) Dowds, superintendent of the Patricia District; Jack Follansbee, rural superintendent, Red Lake and his wife; Don Polkinghorne, patrolman, Red Lake, and others.

Another highlight of the visit to the Red Lake mining area was the luncheon given in the dining room at the Madsen property where E. G. Crayston, the manager, was the host. It was a meal to be remembered and one that gave full and appetizing expression to the ingenuity and

(Continued on page 23)



CHARLIE COOK (second from the right) and his willing trio of helpers are important gentlemen at the Madsen Red Lake gold mine. Their attire indicates one good reason why they are so popular, while Hydro News can bear testimony to their culinary skill which found expression in a memorable luncheon served in the camp—a luncheon which included everything “from soup to nuts.”



AT MADSEN, Red Lake, Hydro News met E. G. Crayston (right), the manager of the gold mine there and his wife who lined up with Mr. Duncan, accountant, for this photograph, taken near the mining property.

GOOD STREET LIGHTING "PAYS OFF" IN BOTH SAFETY AND PROTECTION

George G. Cousins, Hydro's Supervising Lighting Engineer, Tells How An Investment Of \$624 In Better Lighting Saved \$22,000 In One Year

THAT good street lighting pays dividends in fewer accidents and greater protection from law-breakers was emphasized by George Cousins, the Commission's supervising lighting engineer at a recent meeting of the Toronto Section of the Illuminating Engineering Society of which he is a Fellow and also Canadian regional vice-president.

Automobile insurance rates, Mr. Cousins pointed out, were indirectly proportionate to the number of effective lumens, a measurement of light, to the mile. Using actual figures gleaned from three cities, he said that with 38,000 lumens per mile, the rate was \$23. This jumped to \$29 in another town where the lighting was calculated at 24,500 lumens and to \$50 in a locale where there were only 6,280 lumens per mile. While insurance companies did not set premiums according to the lighting in any community, they did determine them by the number of accidents which occurred and which had been found to be proportionate to the adequacy of the lighting, Mr. Cousins stated.

Lighting And Accidents Studied

One city that was under constant observation for a number of years had 22,500 automobiles registered. Over a three-year period, lighting and accidents were studied and under improved conditions the accident rate fell off with a resultant reduction in insurance premiums to the tune of \$4 per car, representing a gross saving of \$90,000 a year to the insured drivers.

Savings from insurance were only a part of the actual

cash in pocket that resulted from well-lit streets and intersections, Mr. Cousins stated. He estimated that the cost of a fatal accident would average around \$43,000 but for every fatal accident there were about 55 non-fatal accidents which also represented economic loss.

To emphasize the fact that good lighting is good business, Mr. Cousins told how one community had spent \$624 to improve lighting at 14 intersections. This action resulted in the accident rate being cut to a point where a direct saving of \$22,600 was effected in one year.

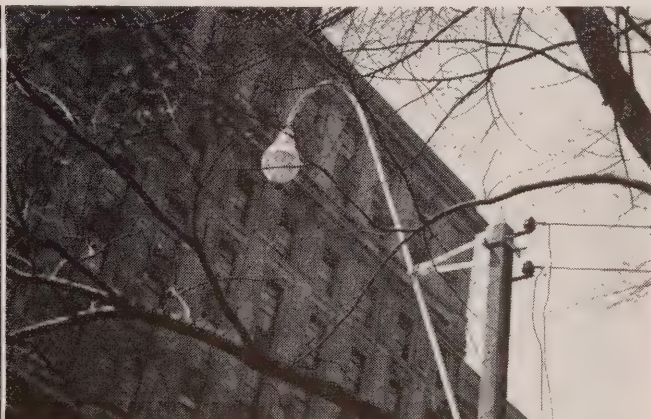
An axiom that should not be forgotten and which could be substantiated by facts and figures, stated Mr. Cousins, was that where a town, village or city had the lowest cost per capita in the matter of street lighting, there the highest accident rate would be found. At night, two-thirds of the accidents occurred when only about one-third of the traffic was on the road. "Until the time comes", declared Mr. Cousins, "when there is no difference between the day and night accident rate there will be a need for better street lighting."

Accident Rate Doubled

"During the war", he continued, "Detroit found it necessary to have a reduction in street lighting because of the necessity for power conservation brought about by war industry needs. With this measure, the accident rate just doubled because the reduction in the lighting resulted in a corresponding reduction in the visibility of the road and its traffic."

Mr. Cousins commented on the fact that many municipalities were now implementing plans for better street lighting which over a period of time will make safer driving throughout Ontario.

IN TORONTO, the Hydro-Electric System is going ahead with a million-dollar street lighting programme. Already, up-to-date lights have been installed on University Avenue (left) one of the city's principal traffic arteries. A close-up of one of the new luminaires and an extension bracket is shown on the right.



HYDRO GIRLS ASSIST SANTA; VISIT MILITARY HOSPITALS



APPROXIMATELY 170 men and women, patients at Christie Street Military Hospital in Toronto, were entertained at Christmas parties on December 20 and 21 respectively by members of the Ontario Hydro Girls' Club.

The entertainment took the form of installing and decorating Christmas trees; visits from Santa Claus with gifts to each patient, and singing. Later refreshments were served.

The Ontario Hydro Girls' Club was inaugurated in November, 1944 and since that time members have paid weekly visits to the roof ward where there are about 30 patients, and to the north annex where there are 110 men and 30 women. On these visits the girls play cards, checkers, have musical quizzes, sing-songs, bingos, or sometimes just chat with the patients and round off the evening with the serving of refreshments.

The need for this work has in no way diminished since the cessation of hostilities. In fact it has increased, as there are just as many or more patients and fewer groups attending regularly. For this reason, the Hydro girls are anxious to increase their membership roll and expect to continue the work for some time.

Lyndhurst Lodge, another military hospital in Toronto, is also visited each week. Bessie Grader, Margaret Scales and Evelyn Lindensmith take an active interest in this locale, and on December 18 held a Christmas party and distributed parcels to 30 patients.

Committee in charge for the 1946 season are: Isobel Wilson, president; Betty Peacock, vice-president; Nina Shishko, secretary-treasurer; Joan Bates, "Toots" Faulkner, Ann Sheldon, Eleanor Macdonald, conveners; and Bessie Grader, convener for Lyndhurst Lodge.



LOOKS LIKE these men and women patients in the north annex at Christie Street Hospital in Toronto are getting a real "hand-out" from Nina Shishko, while Audrey McCabe and Santa Claus (Gordon Norris) stand ready to assist her.



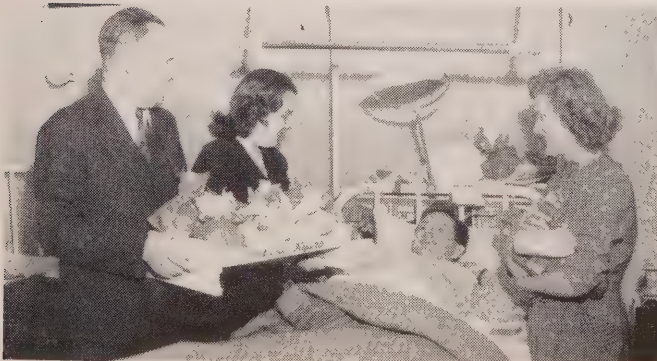
F. S. McKAY, surrounded by his boy scout choir, led the sing-song for the Christmas party in the north annex. Included in this group are: Audrey McCabe, Freda Pearce, Eleanor Macdonald, Nina Shishko, as well as patients.



SANTA CLAUS, alias A. W. Murdock of the Commission staff, was snapped when delivering Sandy Wilson's gift in the roof ward, while Audrey Callan (left) and Rosemary Robb listen in to the good wishes.



PATIENT RENE Brosseur in the roof ward is getting plenty of attention from P. T. Seibert, councillor of the Ontario Hydro Girls' Club; Isobel Wilson, president of the Ontario Hydro Girls' Club; and Santa Claus.



R. E. BROWN, past-president of the Ontario Hydro-Electric Club, Ann Sheldon (left) and Audrey McCabe bring "their best" to this patient in the north annex.



KAY STOCKWELL (left) and Betty Peacock, vice-president of the Ontario Hydro Girls' Club, can't wait to untie the parcel, while Austin Lamothe takes it easy.

COMMISSION MAKING CLOSE STUDY OF NIAGARA FREQUENCY PROBLEM

All Technical And Economic Questions Involved In Possible Change-Over From 25 To 60 Cycles Under Review—Respective Advantages Compared

THAT there are many complex problems involved in effecting a change-over from 25- to 60-cycle power in the Niagara Division of the Southern Ontario System is fully appreciated by The Hydro-Electric Power Commission of Ontario.

Statements made by representatives of the Commission at recent district meetings of the Ontario Municipal Electric Association have shown that these problems are varied in character and embrace, not only engineering considerations but many economic questions.

It has been pointed out that because all the technicalities are not fully appreciated, many people are not aware of the many correlated problems associated with a frequency change-over. In the first place, one of the things which is not generally realized, it is stated, is the reason why 25-cycle power is in use at the present time.

To get the picture in its true perspective it is necessary to go back to the early days of electrical development. At that time, it has been emphasized, there was no universal standard of frequency and each manufacturing company, when bringing out its alternating current system, adopted an individual standard of its own which was specified in "alternations per minute" rather than in "cycles per second." A.C. generators at this period were used for lighting only, each consumer having his own individual transformer, the high frequency—sometimes as high as 140 cycles—reducing the cost of these small transformers.

A Compromise Of 25 Cycles

When the Niagara Falls Power Company built its No. 1 plant on the American side of the Falls in 1892, there was much discussion on the question of frequency, and finally a compromise of 25 cycles was agreed upon as the most efficient under conditions existing at that time. Lighting in larger cities such as Buffalo was largely supplied by Edison three-wired direct current systems; but even on alternating current at 25 cycles, the old 16 candle power carbon filament lamps are said to have shown no appreciable flicker.

On the Canadian side of the river, The Canadian Niagara Power Company (1904), The Ontario Power Company (1905) and The Electrical Development Company (1906) all followed the lead with a frequency of 25 cycles. In 1908 a contract was signed between the Commission and The Ontario Power Company for 25 cycle power, and thus it came about that the Niagara power district was introduced to this now berated frequency.

As the chairman of the Commission, Dr. Thomas H. Hogg, has pointed out, when the first world war necessitated the planning of a major development at Queenston,

the engineering factors governing the choice of frequency were less pronounced than they are today, and after consideration of the costs involved—Hydro was a young concern then, and only beginning to feel its way—and because of the confusion which would be created in adopting a new frequency during wartime, the decision was made to continue at 25 cycles.

In an address delivered at Niagara Falls on "Canada's Electrical Future", Dr. Hogg made these further statements: "Let us examine the situation. Sixty cycles in recent years has become established as the standard frequency on this continent. Hydro distributes 60 cycles in Eastern Ontario, in the Georgian Bay and Thunder Bay areas and in parts of Northern Ontario. The problem, which we have recognized for many years, is one of effecting the conversion of a major network totalling 1,300,000 kw. of generating capacity, 725,000 kilowatts of which are in Commission owned plants. The invested capital in this network amounts to about \$200,000,000."

Obviously, for financial reasons alone, it will be impossible to effect the change which so many people desire as a sort of "electrical coup-de-main." If undertaken, it certainly would not be an over-night job, with the consumer waking up in the morning all "hunky-dory" with 60-cycle supply. A complete change-over would necessarily take several years—perhaps as many as ten.

Comparison of Advantages

Another question which many people do not understand, it is stated, is that of the comparative advantages of the two frequencies. A preliminary report prepared by Commission engineers sets forth the following advantages of 25 cycles:

- (1) For a given transmission line the voltage regulation is much poorer at 60 cycles than at 25 cycles. On long lines such as the 22 kv. 25-cycle lines feeding from the east a considerably greater capacity in synchronous condensers will be necessary at 60 cycles and it may be found necessary to increase the number of lines for the same amount of power delivered. This can only be determined by calculation.
- (2) Twenty-five cycle power has the advantage over 60-cycle power in those industries which require low speed induction motors such as steel mills, mining mills, etc.
- (3) Twenty-five cycles originally had the advantage over 60 cycles in the matter of operating single phase railways and synchronous converters for d.c. railways. This advantage has now disappeared

since single phase railways are no longer in vogue and d.c. railways are using Automatic Mercury Arc Rectifier Stations for transforming from a.c. to d.c.

The advantages cited for the 60-cycle frequency are:

- (1) All 60-cycle utilization equipment transformers, motors, etc., are smaller, and cheaper than the corresponding 25-cycle equipment. Sixty-cycle motors have a wider range of speeds to choose from since they range in speed up to 3,600 r.p.m. whereas 25 cycle motors can be had up to 1,500 r.p.m. only.
- (2) Sixty cycle steam turbo generators can operate at 3,600 r.p.m. whereas 25-cycle machines can operate only at 1,500 r.p.m. A 3,600 r.p.m. turbo generator is more efficient and cheaper than a 1,500 r.p.m. machine. This is not of much moment at the present in Ontario since the H.E.P.C. does not own or operate any steam turbo generator stations on any of its systems.
- (3) Sixty cycles is to be preferred over 25 cycles for all lighting purposes—incandescent and fluorescent—due to the serious flicker at 25 cycles.
- (4) Sixty cycles is particularly adapted to use in those industries using high speed motors such as in textile mills.
- (5) Owing to the fact that 60 cycles is the predominant frequency in Canada and the United States, it is natural that all new devices are designed initially for this frequency. It is usually some time later that these devices are made available for use on 25 cycles and the public are inclined to be impatient at the delay and the additional cost over 60-cycle equipment.

At the same time, 60-cycle current, it is pointed out, is a more standard frequency for broadcasting and radio, the 25-cycle area presenting a distinct difficulty in the light of pending developments in the field of television.

Undertaking of Tremendous Magnitude

In facing the thousand and one complex problems involved in a frequency change-over, the Commission is confronted with an undertaking of tremendous magnitude, it is emphasized. The Niagara Division, in which 25-cycle power predominates, represents over 80 per cent of the consumers in the Southern Ontario System. The 25-cycle portion of the load during the past fiscal year was 1,840,000 horsepower or approximately 85 per cent of the total Southern Ontario System load.

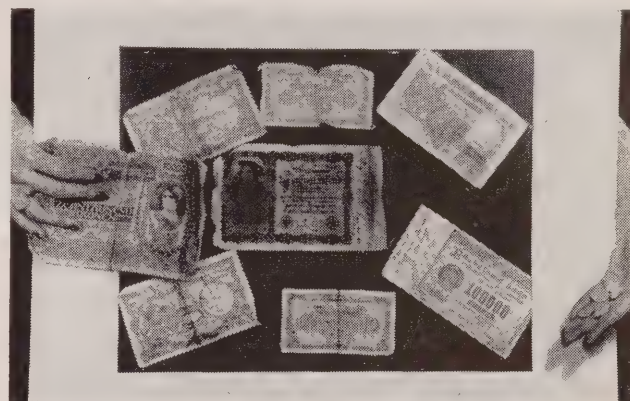
From the economic standpoint, it is explained, the Commission has to consider how the cost of the change-over would affect the whole Hydro system. Having in mind its responsibility to the people of the province and the future well-being of Hydro as a whole, the Commission is making a detailed study of all the economic as well as the technical aspects of a frequency change-over in the Niagara Division.

At the present time a big development is planned at Des Joachims on the Ottawa river. If a decision were

MONEY! MONEY! MONEY!

THERE'S a considerable sum of money on hand here—to be exact something like \$62,504.90 if it were negotiable instead of occupational currency.

This money was brought back to Canada as a souvenir by R.S.M. Herbert Hillier, O.B.E., who was mentioned in despatches for gallantry and who is now a constable in East York. It was shown to Hydro News by Harold Hillier, Herbert's brother, who is in the Commission's promotion department.



WHILE THIS photograph was being taken, the assistant editor of Hydro News had more than \$60,000 between her hands. This amount, however, was made up of occupational currency which is among the war souvenirs of Herbert Hillier, a brother of Harold, who is on the Commission staff.

The diploma-sized bill held at the left side of the picture was issued by the Austria-Hungarian bank in Vienna back in 1918. Evidently, the issue was cancelled and remained out of circulation until some time in the 1940's when the German government re-issued it by the simple method of sur-printing a stamp over the already well-worn bills.

At the lower right is a Russian note which, when issued, had the buying power of \$40,000. In its normal condition it is a rust colour with plenty of engraving artistry but bears little discernible script or signatures.

Other bills that are shown are francs of both Belgian and French origin while the silver is Dutch. The coins bear the likeness of Queen Wilhelmina, who took refuge in England at the time of Hitler's invasion of Holland in 1940, and who paid a fleeting visit to Canada and the United States. The printing on the coins is in English although, in this case, it is not occupational currency.

made in favour of conversion this plant could be designed to provide the 60-cycle lead-off for the new programme.

The whole problem, it is reiterated, is one which the Commission, as trustees for the whole Hydro system, must study very closely. It is also emphasized that if a decision should be made in favour of a change-over from the 25 to the 60-cycle, the undertaking would then become a joint one, involving close co-operation between the Commission, on one hand, and the municipal Hydro systems, on the other, with all parties assuming proportionate responsibilities in carrying out the programme.

C.E.A. MEDALS PRESENTED AT LONDON R.P.D. DINNER

KNOX church, London, Ontario, was the scene of a turkey dinner on December 11 when the employees of the Hydro Rural Power District in that area were guests. Ray Hughes, superintendent of the London R.P.D., was in the chair and the men were piped in to dinner by Jim Hamilton, foreman of London R.P.D., a famous Canadian piper. Superintendents, foremen, linemen and other male employees of the following R.P.D.'s were present: Aylmer, Delaware, Dorchester, Dutton, Exeter, Ingersoll, London, Lucan, Norwich, St. Thomas and Woodstock. Because of emergency duty, members of Tillsonburg R.P.D. were unable to attend.

Men Are Introduced

After dinner Mr. Hughes asked each superintendent to introduce the men in his district who had recently returned from the Armed Forces. A group of trainees from the Linemen's Training School were present as special guests and these men were introduced by Tom Izzard, one of the instructors at the school.

R. M. McKenzie of the municipal department then introduced Wills Maclachlan, who, on behalf of the president of the Canadian Electrical Association, presented the Canadian Electrical Association Resuscitation Medal to the Delaware Rural Power District line gang for the successful resuscitation of Fred H. Denning on July 19, 1945. This was received on behalf of the gang by R. A. Campbell, superintendent of the Delaware R.P.D. and miniature replicas of the medal, together with certificates were presented to Clarence Pettit, foreman, Milo Morgan and George Skinner, linemen. Letters of congratulations were also presented from Dr. Thomas H. Hogg, chairman of The Hydro-Electric Power Commission of Ontario.

Outlines Work Of School

Following the presentation, S. K. Cheney explained the organization of the Linemen's Training School, outlined the course of study that is being given and showed some photographs which had been taken recently of activities at the school. The evening ended with the showing of a Hydro film "The Romance of a River."

Special guests, in addition to those already mentioned, were Adam Smith of the municipal department in Toronto and Dick Shannon, employee representative for the London District, and also W. E. Rider, V. D. Wailes and K. G. Legg, also of London.



CLARE NEAL DIES

A former member of the Hydro News staff in the person of CLARE G. NEAL, aged 37, of 147 Sellers Avenue, Toronto, died on the last day of the old year. On Christmas Eve he suffered a heart seizure and was taken to Toronto Western Hospital where he passed away.

A journalist with Hydro News, he was known to many on the Commission staff in Toronto, while he had also come in contact with the personnel of many Hydro municipalities in the course of his duties. Mr. Neal started his newspaper career as a suburban correspondent with the old Globe in 1931, and was later associated with The Telegram before coming to the Commission in June, 1943. In January of last year, he accepted an offer to return to The Telegram.

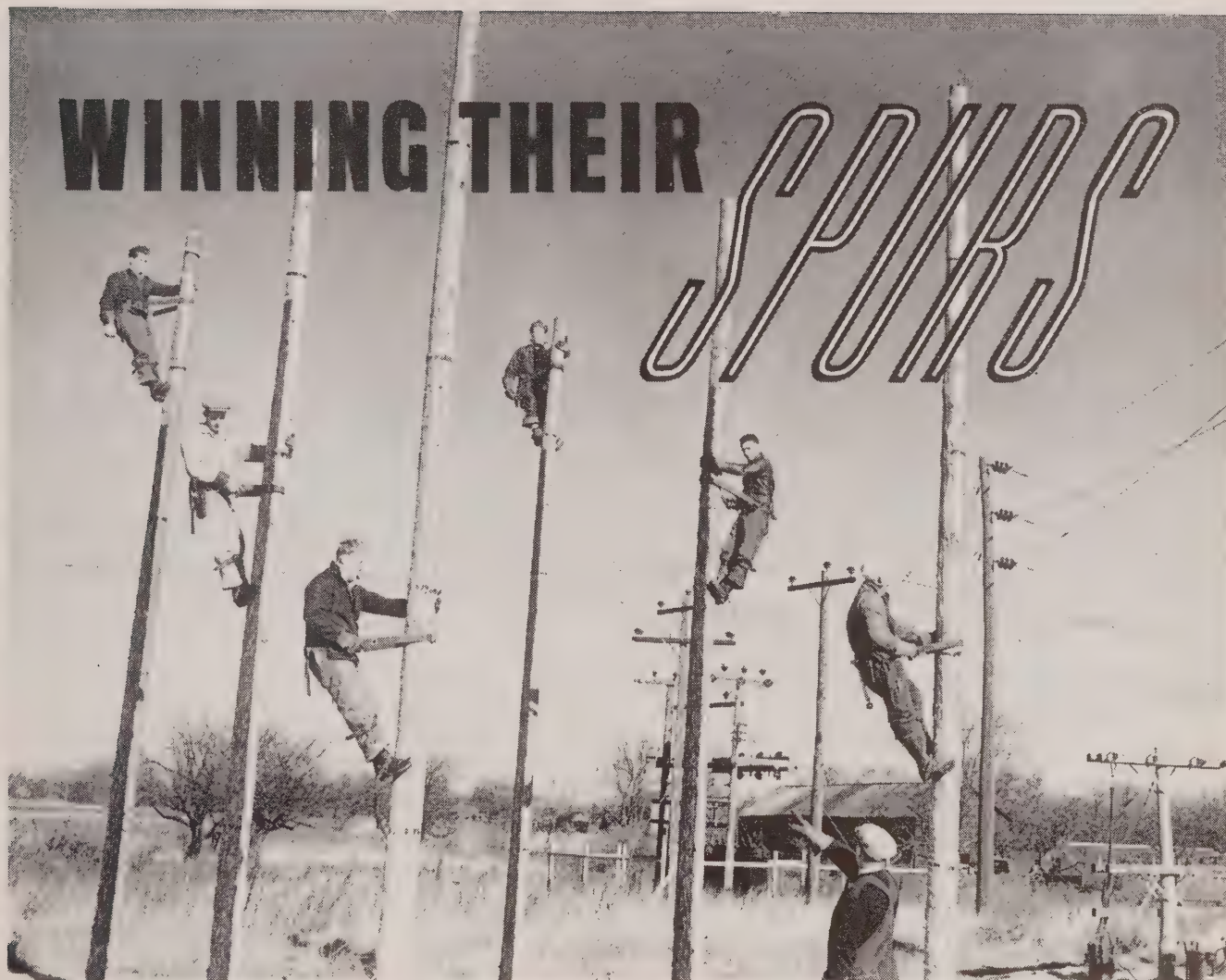


A native of Toronto, Mr. Neal received his education at Clinton Street and Earls court public schools and Vaughan Road Collegiate and was a member of Annette Street Baptist Church.

Surviving are his widow, Elsie, two children, Douglas, 10, and Janet, 6, his parents and a brother, Paul H. (Homer) Neal. Interment was at Prospect Cemetery.

IN LONDON, the members of the R.P.D. get together once a year for a social gathering. The quartet (lower left), employees of the Delaware R.P.D., are holding the certificates and C.E.A. resuscitation medals awarded for saving the life of a fellow worker. They are M. E. Morgan, R. A. Campbell, C. Pettit and G. H. Skinner. Part of one of the tables is shown (upper right) and immediately below it, is the head table at which are seated Adam W. Smith, R. M. McKenzie, R. E. Hughes, Wills Maclachlan, S. K. Cheney, H. K. Hillier and Dick Shannon.





TRAINEES AT the Hydro linemen's school learn the knack of climbing poles and supporting themselves with their safety belts. Reading from the left are F. W. Harrison, W. R. Thomas, H. T. Cramer, E. O'Connell, W. E. Hunter and F. G. Wilson. The instructor is C. G. Wilby.

WITH the first group of trainees graduated on December 21, the Hydro linemen's school on the Royal York road in Etobicoke township, is now in full stride in its work of instructing young men in the jobs entailed in one of the most important branches of the Commission's activities.

These first graduates have reported back to the districts where they joined the Commission.

Opportunity For Servicemen

The Commission is laying special stress on the school as an opportunity for ex-servicemen and applications are being restricted to those who have served with the colours. In this way, the school will play an important part in the work of rehabilitation as the men turned out will be equipped to develop themselves, over the years, into linemen with the Commission, itself, and with the municipal utilities engaged in the extension and amplification of

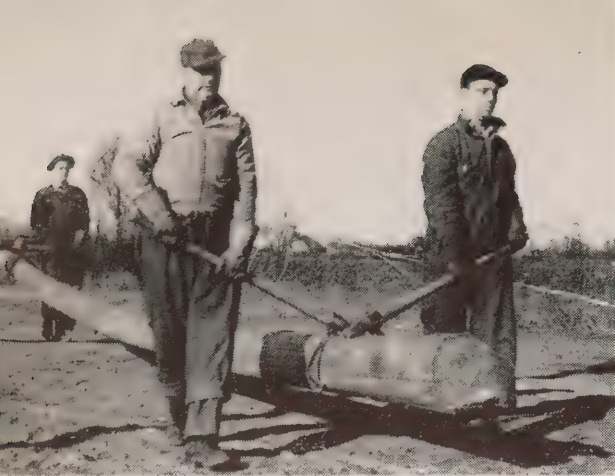
electrical services throughout the province.

At the present time, there is a waiting list of approximately 200 ex-servicemen who have been selected and examined by the Commission and temporarily placed in line gangs as groundsmen and helpers. This was deemed advisable in order to determine the inclination and aptitude of candidates for the work for which they offered themselves. The courses at the school run approximately three months, and as trainees pass out, the waiting list will be augmented by new candidates, including many who are referred to the Commission by the municipalities.

Direction And Staffing

One of the first steps in the formation of the school was to provide competent instructors. A number of experienced line foremen and senior linemen employed by Hydro in different parts of the province were called in and

(Continued on page 18)



CARRYING A pole. Trainees R. T. Elson (left) and R. D. Taylor are using cant-hooks. At the rear, L. J. Arnston (left) and J. R. Sampson employ a timber carrier.



ERECTING A Hydro pole with pikes. Reading from the left are R. D. Taylor, J. R. Sampson, Len Arnston, W. J. McConnell, A. G. McDivitt, Ray Elson and Instructor F. A. Tate.



LEGS MUST be kept straight when climbing so that the spurs may grip effectively—(centre left)—a word of advice from Instructor Wilby to T. G. Wilson.

WORKING ALOFT in a cold wind, Noel Leishman (centre right) finds a parka comfortable. While some tolerance is shown young trainees, Hydro linemen are called upon to effect repairs under all weather conditions.



DEAD-ENDING conductors (bottom left). At the job are R. T. Elson (left), A. G. McDivitt and R. D. Taylor. On the ground with Instructor Izzard are L. J. Arnston (left), J. R. Sampson and W. T. McConnell.

TWO TRAINEES — H. R. Foster (bottom right) and G. R. Harkness—attach a transformer to pole. Linemen must take up a secure position before carrying on with their work.



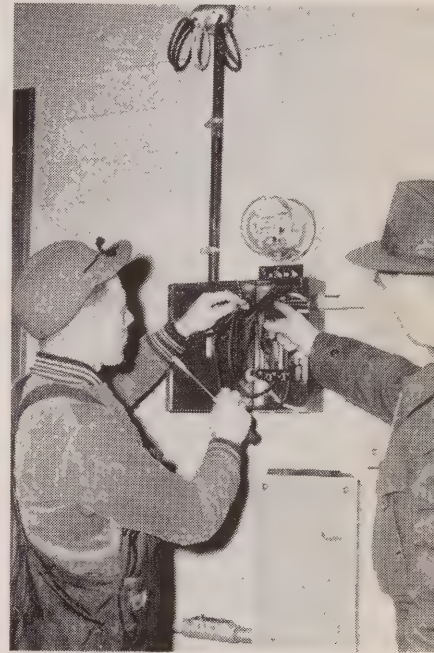


LEARNING TO put a bowline on a bight (top left). George Bell is instructing R. E. Dalgarno (left), G. R. Harness, H. R. Foster, K. G. Churchill, T. P. Shuttleworth, W. R. Thomas and C. T. Hunt.

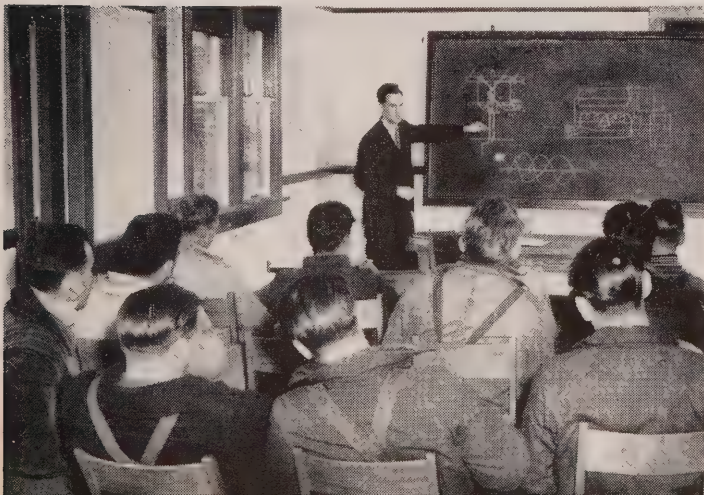
UP-TO-DATE METHOD of erecting poles. The derrick on the motor truck, driven by Instructor Bell, swings the pole into position. C. T. Hunt steadies the pole; and, from the left, are Instructor Mylks, G. R. Harkness, W. J. Palmer, R. E. Dalgarno, H. R. Foster, G. S. Greer and Instructor Izzard.

INSTRUCTOR T. W. IZZARD (centre left) is explaining the arrangement and purpose of line switches. Trainees, left to right, are F. G. Wilson, H. T. Cramer, W. E. Hunter, E. O'Connell, W. R. Thomas and F. W. Harrison.

A LESSON in installing a meter (right centre). Individual instruction is given to Charlie Hunt by Instructor C. L. Mylks. At the school every trainee's work receives close supervision.



A CLASS of instruction (bottom left) on transformer connection. Lectures as a background for practical work are part of the school curriculum. The teacher shown here is R. E. Treen. On the right is the first class at the new linemen's training school established by The Hydro-Electric Power Commission of Ontario. Front row (kneeling), left to right, trainees, W. J. Palmer, L. J. Arnston, H. T. Cramer, F. G. Wilson, G. R. Harkness, E. O'Connell, F. W. Harrison, R. D. Taylor, K. G. Churchill, C. T. Hunt, W. E. Hunter, R. E. Dalgarno, G. S. Greer, W. R. Thomas and D. W. Lippold. Second row, trainees, H. R. Foster and J. R. Sampson. Third row (standing): A. G. McDivitt, W. J. McConnell, T. P. Shuttleworth, H. E. Sanderson and N. J. Leishman; instructors, E. A. Caldwell, C. L. Mylks, and F. A. Tate; superintendent of the school, K. W. MacDermott; senior clerk, E. M. Smith; instructors G. E. Bell, R. E. Treen, T. W. Izzard and C. G. Wilby and trainees, R. T. Elson and B. A. Bolan.



O. M. E. A. — A. M. E. U. WINTER CONVENTIONS

Plans are well advanced for the joint convention of the Ontario Municipal Electric Association and the Association of Municipal Electrical Utilities, to be held at both the Royal York and King Edward hotels in Toronto on March 5 and 6.

Although government wartime restrictions have now been lifted on conventions, local policies in Toronto hotels still restrict the number of rooms they will set aside for convention purposes. For this reason the executives of the O.M.E.A. and A.M.E.U. have booked accommodation at both the Royal York and King Edward hotels. However, the total number of rooms available will still be small, and it may be necessary to limit, to some extent, the number of delegates attending from each municipality.

To facilitate matters, the two associations have set up a joint registration and reservations committee. Advance registration forms will be sent to all member utilities, who will be asked to list the accommodation desired, and return the forms, together with a cheque, for the luncheon and banquet tickets required. The committee will allocate available accommodation and notify the utility of arrangements made on their behalf.

Convention headquarters, according to information received, will be at the Royal York Hotel, where registration and all business meetings will be held. A joint luncheon is planned for Tuesday noon, March 5, at the King Edward Hotel, and a joint banquet that evening at the Royal York Hotel. Wednesday noon, March 6, members of the A.M.E.U. plan to attend the Electric Club luncheon at the Royal York Hotel, while the O.M.E.A. will hold a separate luncheon at the King Edward Hotel.

The executive of both associations are asking for the full co-operation of every member in completing and returning promptly the registration forms, and abiding by the decisions of the committee. In this way the convention can be a "bang-up" affair and one that will be long remembered in Hydro circles.

WINNING THEIR SPURS

(Continued from page 15)

given a course in the teaching and instruction methods which have been developed by the government through an organization known as Canadian Vocational Training. Under the immediate direction of Wills MacLachlan, head of the employees' relations department, assisted by S. K. Cheney, the school staff, as at present constituted, consists of K. W. MacDermott, school superintendent, with E. A. Caldwell, C. L. Mylks, F. A. Tate, G. E. Bell, T. W. Izzard and C. G. Wilby as instructors. R. E. Treen of headquarters staff has been assigned to lecture duties, while E. M. Smith is employed on the necessary clerical work at the school.

Linemen trainees at the school put in a forty-eight hour week, working and studying in small groups so that every man practically receives individual instruction. Training covers the fundamentals of line work, while, in the classrooms, lectures and demonstrations are given so that

the trainees may acquire the theoretical background for the practical work they engage in outside.

Trainees Learn Art Of Climbing

A visitor to the school would probably first be attracted by a circle of tall, bare poles erected just beyond the buildings. On these the trainees are initiated into the art of climbing. They learn the stiff-legged method of ascending these "timbers" which is essential to the proper gripping of the spurs. They are also taught to secure themselves at any height and in any position by the proper use and support of their safety belts—tested for strain far beyond any which a lineman might be called upon to exercise.

Climbing is the first job to which trainees are put. If they fail at this test through giddiness, they would obviously be unsuited for line work and it would be futile for them to continue further with their course. Up to the present, there have been no rejections on this account.

Instruction In Line Work

From pole-climbing the trainees pass on by progressive steps to the different phases of line construction. On a model line of shortened poles trainees are given lessons in the arrangement and purposes of line switches, transformers, conductors, etc. In the fields—the training area comprises more than six acres of instruction lines—they learn how to erect poles and equip a line for service. Certain fundamental repair jobs also come within the scope of their training.

During their course of instruction, trainees are accommodated in comfortable bunk-houses or dormitories. There is a large dining-hall with an adjoining kitchen, while a recreation hall has now been completed and will be furnished in the immediate future.

School Fills Long-Felt Want

Outside of its importance in the national plan for the rehabilitation of servicemen the school will fill a need that has long been felt by the Commission. It is confidently expected that the instruction which is being given will provide a more thorough and systematic training in the theory and practice of line work. For ex-service men it offers not only the attractions of a healthy outdoor life but an unequalled opportunity, since there is no technical school in Canada, which they might attend under government rehabilitation arrangements, which is in a position to provide this particular type of training.

SOLDIERS' COMFORT BOXES

Approximately 92 comfort boxes, valued at approximately \$5.00 each, were sent before Christmas to Hydro employees still serving overseas. This work was done under the direction of C. V. Somers, comfort box chairman of the Ontario Hydro-Electric Club.

ARTHUR BABCOCK PASSES

ARTHUR BABCOCK, aged 55, line superintendent of the Galt Public Utilities Commission and a native of Galt, died on January 5. He had been with the local commission for about 35 years. Mr. Babcock is survived by his widow and a daughter, Gloria. The funeral was held on January 8, with interment at Galt Cemetery.

PARTY ALSO A "WELCOME HOME" TO MEN BACK FROM SERVICES



Military Record Of Transmission and Distribution Section Of The Commission's Electrical Engineering Department Shows That 75 Of The 105 Employees Served in Armed Forces

"THERE was revelry by night . . ." as more than 80 employees of the Commission's transmission and distribution section (electrical engineering department) gathered on December 20, 1945, for their annual Christmas party. It was a lively, fun-packed evening, replete with banquet, bowling, movies and entertainment—an enthusiastic celebration of the first war-free Christmas since 1938.

For many of the staff, it was also a merry "Welcome Home" from active service in many parts of the world. The event contrasted sharply with the situation one year earlier, when many of the boys spent Christmas in the thick of front-line fighting, strafing enemy military targets from the skies, and risking death in the submarine-infested waters of the world. The transmission and distribution section built up a remarkable military record: out of 105 employees in the section, 75 saw service in the armed forces, with 11 making the supreme sacrifice.

Head table guests at the party included **R. L. Hearn**,

chief engineer of design and construction; **A. H. HULL**, electrical engineer; **J. E. Sproule**, transmission and distribution section; **E. F. Hinch**, **E. G. Archer**, **J. P. Morgan**, **G. H. Taylor** and **M. A. Allen**.

The upper picture shows veterans of the armed forces enjoying themselves at the annual Christmas party of the transmission and distribution section, electrical engineering department. Left to right: **W. A. Hall**; **A. Sutherland**; (Flying Officer) **M. Bernbaum**; (Flying Officer) **A. Stringer**; (Lieut.-Col.) **T. F. Howlett**; (Flying Officer) **G. McGregor**; **J. Smith**; (Major) **W. J. Baxter**; **H. L. Hickey**; (Squadron Leader) **Bruce Servos**; (Flying Officer) **R. Reid**; (Squadron Leader) **H. A. S. Molyneux**; **J. T. Hall**; (Captain) **W. J. Murray**; **A. H. Anderson**; **D. Hester**; (Flying Officer) **W. Darrell**; **F. Iley**; **Ray Hagerman**, and **D. Rich**.

The lower photo shows a cross-section of the staff at the banquet table in Muirhead's, Toronto.

STRESS ADEQUATE WIRING IN PLANNING FOR FUTURE

**Noteworthy Record Attained By Electric Service League In
Setting Wiring Standard Symbolized By Red Seal**

ADEQUATE wiring of homes, offices, factories and commercial buildings ranks as one of the primary requisites of Ontario's post-war electrical future, according to enlightening facts and figures set forth in the far-reaching programme of the Electric Service League.

The League, which has a noteworthy twenty-year record of service to its credit in the Toronto area, has been responsible among other things, for setting a wiring standard symbolized by a Red Seal which has benefited the electrical industry and commanded the confidence of electrical consumers.

To obtain some first-hand information about the work of the League, Hydro News dropped in on George W. Austen, its active secretary, who was able to furnish some interesting information about the League, which, he stated, began operations in 1923 in Toronto, starting in a very small way.

In that year, the Red Seal Plan for adequate wiring of homes was created by the League. As a new wiring promotion feature for the industry it quickly became very popular, and the American rights to the Red Seal Plan were promptly obtained by the Society for Electrical Development Incorporated, and the programme in the United States was developed through fifty local Leagues. In Toronto operation was commenced on a local basis, and has developed rapidly and successfully to the point where the League now has 33,000 Toronto homes certified as to adequacy of wiring.

Red Seal Certifies Wiring Standard

Briefly, the Red Seal Plan is a system of certifying, with a special Red Seal symbol, homes wired to a standard set by the League on behalf of the industry. The League has also developed commercial wiring and lighting to the point where 1,000 commercial buildings in Toronto have been relighted in whole or in part through the efforts of the League, (supplementing the lighting sales and promotion work carried on by the rest of the industry). As well as this, it conducted a Red Seal store wiring campaign, setting a standard that would ensure facility for good lighting. It had 1,400 stores wired to its Red Seal standard, adding by its work about 15,000 lighting outlets capable of taking 300 to 500 watt lamps.

The financing of this programme has been a co-operative undertaking by the manufacturers, distributors and the Toronto Hydro-Electric System. For the past several years, an average income of approximately \$16,000 annually has been assured by these sources, the amount contributed by the commercial companies being equalled by the Toronto Hydro.

The personnel of the League has grown from a one-

man staff in 1923 to a staff of ten of whom seven are field men. Five of these seven employees were supplied on loan to the League and paid by the Central Station. (The Central Station, in this case, being the local Hydro system.)

The general results and business contributed by this wiring and lighting work are indicated in a folder issued by the League before wartime conditions forced the organization to "mark time." The creation by the League itself of approximately \$14,000,000 worth of added business at a cost to the electrical industry of about 2½ per cent has been of great benefit to the industry as a whole.

The League in Toronto far out-distanced other Leagues by the efficiency of its Red Seal wiring operations. At one time (before war conditions intervened), it reached a saturation point of 90 per cent in the number of Red Seal homes in relation to total building. The League had four hundred speculative builders signed on the dotted line to have all houses built by them, wired to Red Seal standards.

Issues Up-To-Date Booklet

The League is now reconstructing its operations for the present post-war period and one of its first steps has been the issuing of a sixteen-page booklet entitled "Adequate Wiring for the Post War Electric Homes of Canada." So far, Canada has had no booklet of this kind dealing with up-to-date information on home wiring so that this new publication should fill a very important need. The League proposes to give it a circulation among electrical men from Halifax to Vancouver, and to see that it reaches also the builders, architects and other construction interests all over Ontario. The League, it is stated, is now in a position to extend the benefits of its experience and its post-war programme beyond the Toronto zone to Ontario generally.

The booklet itself is recognized as an authoritative handbook on wiring for the average home. It gives detailed information coupled with profuse diagrams and photographs on wiring needs for the house, room by room, section by section. It includes a discussion of the actual cost of wiring, a description of the wiring needs and also suggested lighting fixtures and equipment for every part of the house.

The future service of the League, coupled with the coming construction boom, is regarded as one which is highly important to the industry and electrical consumers alike. Any limitation will arise only from inadequate support from the electrical industry, and that is hardly probable when such a lack of support would react seriously on the industry itself. What the League plans, it is emphasized, is a most valuable public service; it stands for full



LEFT: GEORGE W. AUSTEN, Manager and guiding spirit of the Electric Service League since it was founded some twenty years ago. Top right, a row of certified "Red Seal" houses on a Toronto street. Lower right: Placing the Red Seal of approval on a new house, one of the 33,000 Toronto homes that have been thus marked; this seal stands as a symbol that this house is wired to a standard set by the Electric Service League.



electrification of homes, the better lighting of stores, offices and factories and the extension of the blessings of electrical service.

While in the office of Electric Service League in Toronto, Hydro News noted the fine tribute paid to the man who was responsible for organizing the League. The tribute takes the form of a plaque which bears the following inscription: "Presented to George W. Austen, Manager, Electric Service League Incorporated, by unanimous vote of the Board of Directors of the Society for Electrical Development, Incorporated, September 7, 1925, in recognition and appreciation of his contribution to the electrical industry in conceiving and initiating the idea of the Red Seal Plan to assure adequate wiring.

"Promising to the industry abundant and measurable returns, his achievement ranks as an outstanding example of the evolution of co-operative thinking and effort—of high service ideals made practical and universally applicable—of international goodwill and co-operation in industry.

PRITLOVE PICTURES

SERGEANT EDWARD P. PRITLOVE, whose letter from Germany was published in the October issue of Hydro News, has now returned to Canada and is with the Listowel R.P.D. Fighting through Europe with the Canadian Army gave Sergeant Pritlove an opportunity to get some unusual pictures with the camera that was a cherished part of his equipment right through from the French coast into the heart of Germany. From the hundreds of pictures that he brought back Hydro News has selected the group reproduced in this issue of Hydro News as being of particular interest. (See page two)

HYDRO TO BUILD NEW PLANT ON AGUASABON RIVER SITE

To Supply Power To \$16,000,000 Sulphate Pulp Mill And Townsite And Tie-In With Thunder Bay System—Will Be 45,000 Development—Plant And Transmission Line To Cost Estimated \$10,000,000

IN the near future, the Commission will start construction of a new 45,000-horsepower development on the Aguasabon river in Northern Ontario.

The primary object of the undertaking is to supply power for the sulphate pulp mill which the Kimberly-Clark Corporation of Canada, Limited, will erect on a site approximately two miles north of the river's outlet into Lake Superior and seven miles east of Schreiber, at a cost of \$16,000,000—including pulp mill and townsite.

The new power development, which will be tied into the Thunder Bay System, will call for the expenditure of some \$8,500,000, and will provide employment for 400 men.

A transmission line, linking the new plant with Hydro's Alexander Landing development on the Nipigon river—a distance of approximately 70 miles—will be constructed at a cost of some \$1,500,000. The new plant, combined with the transmission line, will, therefore, represent an overall estimated cost of \$10,000,000.

Completion of the power project will synchronize with the completion of the sulphate plant so that power facilities will be available in the spring of 1948 at the time the pulp-mill is ready to go into operation.

A highly advantageous factor in the construction of this new Hydro plant is the Long Lake diversion completed by the Commission in 1938 through which a portion of the river flow northward to James Bay was re-routed southward to the Great Lakes.

The original object in effecting this diversion was to provide channels so that valuable stands of pulpwood on limits adjacent to the Kenogami river—a tributary of the northward-flowing Albany—could be cut and transported by water carriage to Lake Superior. A dam was built on the Kenogami river 15 miles north of the outlet of Long Lake; a channel 20,119 feet long leading from the south end of the lake to the control dam was constructed; sluices and a log slide were built, and minor channel improvements were made downstream from the control dam. These structures control and convey the major part of the run-off from an area of 1,630 square miles southerly into the Aguasabon river and thence to Lake Superior, about seven miles east of Schreiber.

Besides serving the purposes of providing for transportation of pulpwood and of diverting water to the Great Lakes system for development of power at Niagara Falls and elsewhere, the project has greatly increased the potential power on the Aguasabon river near its mouth where, in the course of a few miles, the river falls some 300 feet

in a series of rapids which the Commission is now in a splendid position to develop in the interest of consumers in its Thunder Bay System.

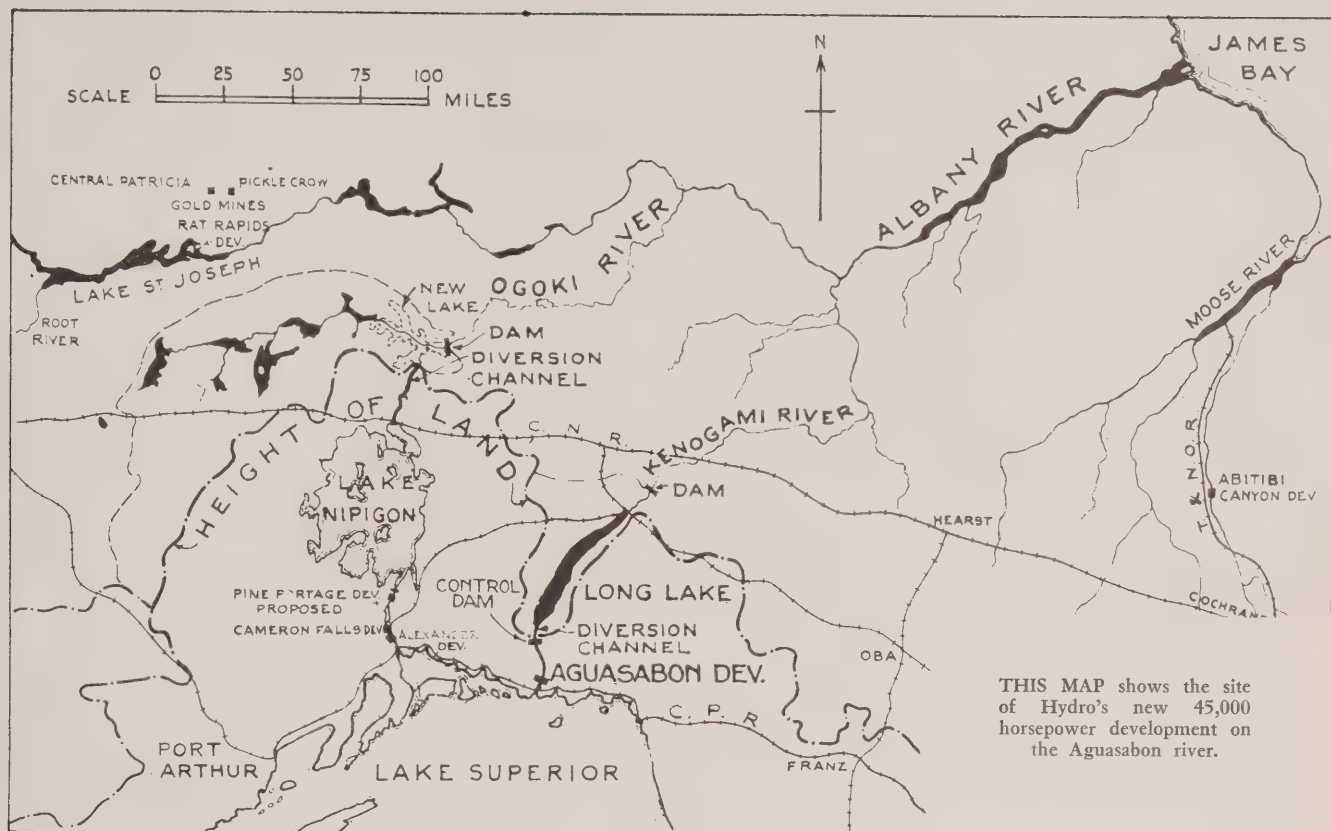
The water diverted through the control dam since January, 1941, has averaged 1,390 cubic feet per second. The new power site will have available, in addition to the diverted water, the natural run-off of the Aguasabon river between the control dam and the new power dam which will be constructed by the Commission. This dam, to be built upstream from the Canadian Pacific Railway, will raise the water level at the site and create a large head of pond, thus enabling a power development to be built with a head of 300 feet and of 45,000 horsepower capacity.

The dam will be built between prominent rock bluffs on either side of the river and will have a maximum height of 150 feet. It will raise the water about 70 feet, flooding back through Bluejay creek to Bluejay lake,

(Continued on page 27)



THIS INSTRUMENT man is shown in action in the vicinity of the site of the new 45,000 horsepower Hydro development on the Aguasabon river which flows into Lake Superior. Power from this plant will serve a new sulphate pulp mill and townsite, and will be tied into the Thunder Bay System.



NORTH OF THE FIFTIETH PARALLEL

(Continued from page 8)

versatility of the chef whose name, appropriately enough, is Cook, the first name being Charlie.

It was, naturally, inevitable that the subject of Hydro should be in the forefront in the conversations at these and other events. All these managers, without exception were anxious that Hydro News should be convinced of their whole-hearted appreciation for the job Hydro personnel and Hydro power are doing for the people who are engaged in the gold mining industry. "But for Hydro," one of these managers told Hydro News, "it would be impossible to do the job that we are doing."

These were sincere tributes from sincere men and not platitudes from individuals trying to create an impression. As recorded in the first chapter of this series, Hydro power was first made available for the mining of gold in 1929 when the first unit at the Ear Falls development was placed in service on Christmas Day. With the war now over, reliable authorities predict that gold mining in the Red Lake area is going to boom at a greatly accelerated tempo.

In conversation with Hydro News, A. G. (Alex) Hattie, director of mining for the J. E. Hammell mining interests, and manager of the Pickle Crow property, predicted that within the next two years at least five more good producers would be in operation between Pickle and

Red Lake. Coming from such an authority, this prediction was both interesting and significant in the light of the first-hand observations Hydro News was able to make during the brief but highly enlightening tour of this gold mining area.

Red Lake, we were informed, takes in an area 25 miles east and west and 8 miles north and south. The Howey property, which is not now in operation, and which was the first mine supplied with Hydro power, was discovered by Lorne Howey, the mill being in operation by March, 1930. It was interesting to learn that Howey was the first low grade mine in Canada. In 1934 the increase in the price of gold stimulated activity in the area and the McKenzie Red Lake mine was opened up and has continued in operation ever since. Next, in 1938, the Madsen and Hasaga both became producing properties followed by Couchenour-Willans in 1940. As is generally known, other reputable mines are now in operation in the area and the potentialities of some of the claims which have been staked seem to offer adequate justification for the confidence expressed by Mr. Hattie and other mining men in the golden future of the Red Lake district.

In the next article in this series, Hydro News will discuss other experiences in the gold mining area and present some additional observations of men who are on the job. At the same time, there is an interesting story to tell about the actual mining of gold and how it feels to be 2,500 feet underground—in the depths of one of these mines.

GETTING THE DROP ON THE SAW-FLY



Hydro Goes In On Wing With A Sprayer To Save Timber Stand At Eugenia Falls

THIS story directs attention to experiments conducted by the Commission's forestry department at the Sidney generating station, Trenton, and at Pheasant Island, Eugenia, in co-operation with officials of the Dominion Department of Agriculture. Those consulted by Hydro included H. G. Crawford, Dominion Entomologist; E. B. Watson, associate entomologist; J. J. de Gryce, head of the Forests Insects Division; R. N. Johnston, chief of the Division of Research; and A. B. Baird, entomologist at Belleville.—THE EDITOR.

By Ron Mathieson, Hydro News

AFTER circling the lake, the helicopter banked against the rising sun, levelled off and came in over the island at tree-top height. The instant the aircraft crossed over the first clump of pines, a spray of mist appeared from the underside of the main-plane. A "D.D.T." spray was being used to actively combat the saw-fly larvae which were gradually destroying red pines on Pheasant Island, a Hydro property at Eugenia Falls.

Thousand Seedlings To Acre

Throughout the province, Hydro has purchased or leased acreages for the development of power sites which are considered sub-marginal, or in other words, areas without any agricultural value. The Commission is particularly anxious to maintain these lands in a well-wooded state not only to preserve natural scenic beauty, but to prevent erosion in spring by retarding a heavy "run-off" of top-soil. Hydro's forestry department has worked hand-in-hand with both the Provincial and the Dominion Governments on these preservation schemes.

At Eugenia Falls where an artificial lake was formed by flooding some 2,500 acres, to provide a reservoir for the power plant, a 75-acre island of no arable value be-



NOT A toy aircraft (above) caught in a Hydro wire but a helicopter caught by the camera as it passed over the stand of trees directly behind the Eugenia generating station in its early morning flight.

PILOT LEAVENS (upper left) dumps a bucket of the solution into tank and Thomas D. Berry stands ready with another one. An interested farmer and his boys look on.

came Hydro property. Since 1931-32, trees of various types have been planted on the island and around the power plant with a distribution of about 1,000 seedlings to the acre, and now there is a promise of a fine stand of timber.

Thomas D. Berry, supervisor of the Eugenia district, where he has seen almost 30 years service with Hydro, has taken a keen interest in these trees from the day they were planted. One day early last August he noticed brown patches among the green foliage. A trip to the



TAKING A bough, Thomas D. Berry (top left) examines it carefully to detect any signs of the saw-fly that might be creeping into a copse of red pines that is so far uninfected.

BROWN IS not a healthy colour for a pine tree to have (top right). This is the way a branch looks after saw-fly larvae have been "at work" on a tree.

OUT ON a limb (lower left), these larvae are really doing a man-sized job when it comes to demolition. Their colour is about the same as the needles, giving them perfect camouflage until the tree begins to die. This was an average cluster of crawling worms that was observed.



island convinced him that a crisis of more than local importance had arisen; the needles of the pine trees were seething masses of black-spotted yellow larvae or grubs; on some trees there were more worms than needles. These signs pointed to the saw-fly whose larvae were gradually destroying red pines by a "scorched needle" warfare, which cuts off the food supply and induces starvation.

Lays Eggs Between Needles

Saw-flies derive their name from the lower or anterior blades of their ovipositor which are rough and saw-like. With this weapon, the fly lays its eggs between the needles. When these hatch, the larvae feed hungrily on neighboring needles or leaves. Fortunately, there is only one batch in a season, and if they are detected in time, spraying can

be planned to destroy the larvae during the early stages of development.

After his discovery, Mr. Berry wasted no time. A call to the Commission in Toronto for advice prompted an immediate conference at which officials of the Department of Lands and Forests were consulted. Spray the trees? . . . Certainly. But considering the then existent labour situation and the time element involved in hand-spraying, it didn't seem feasible. Spray from an aircraft? . . . There was nothing exactly new in that but little had been done in Canada towards actual saw-fly prevention by this method, outside of a few trial flights made by the Department of Lands and Forests while pursuing the spruce budworm. Arrangements were made to try aerial spraying and a helicopter was suggested. This type of aircraft was chosen because of its manoeuvrability and the fact that it does not require an actual landing strip in its operations.

One of the latest developments in the treatment of insect plagues has been the use of D.D.T. This is a nickname for a jaw-breaking chemical term dichlorodiphenyltrichloroethane. The chemist would describe it as a stable, colorless, crystalline solid. Originally discovered in 1874, it was not until quite recently that it came into prominence when it was used by armies operating in European war zones as a curb for typhus by destruction of fleas, the germ carriers. Here at home, the provincial government had carried out some experimental work with D.D.T. as an insecticide but its action against the destructive saw-fly had not been put to the test. Hydro was able to procure an immediate allotment for the emergency and it was shipped to Markdale.

Base Is Selected

A pasture field near the Eugenia reservoir was selected as a base and the helicopter flown by Walter Leavens, landed there to the amazement of local inhabitants who were not accustomed to seeing an aircraft drop down into the "back forty".

In the passenger cockpit was a 30 gallon drum for the insecticide. This tank emptied into a horizontal pipe above the under-carriage known as a boom. From this boom the mix flows through the countless holes resulting in a somewhat atomized effect when the slip-stream blows over the leading edge of the pipe. A valve in the control cockpit meters the flow of the fluid and insures instant operation when the plane is over the designated area for spraying.

A few moments after the aircraft had landed, a Hydro truck arrived on the scene. In the back of the truck was a loading platform made especially for the occasion. The equipment included two empty oil drums for mixing, the D.D.T. crystals in wax containers, wooden paddles for stirring, a clear liquid called xylol, which is the solvent used, and fuel oil for further dilution of the D.D.T.

After computing the exact proportions for the "mix", the ingredients were measured out and the mixture thoroughly stirred. Certain precautions, however, had to be observed. Smoking was "out" because the xylol is flam-

mable, while the local area where the mixing was carried out was covered with tarpaulins in order to prevent injury to grazing animals or inquisitive wild life, if any of the spray got spilled on the ground. The mixture has been proven harmless to warm-blooded animals and fish but in its undiluted state the powder is a deadly poison. If there had been any wind, respirators would have been necessary.

Trip Takes Ten Minutes

When the crystals were eventually dissolved, buckets of the solution were handed up to the loading platform where pilot Leavens filled up the drum before proceeding to the island. It was a warm, windy, day and, as xylol evaporates very quickly in the heat of the sun and because the slightest wind might blow the D.D.T. solution off the target, spraying operations were postponed until conditions were more favourable.

Early next morning, just as the sky was greying, the mechanic warmed up the plane, and when the rotors had revved up satisfactorily, the helicopter took a short run, lifted off the ground and rapidly gained altitude. Guided by a map of the island showing the pine tree location, pilot Leavens completed the first trip in about ten minutes. The coverage on each sweep was a 60 foot swath, the fluid flowing at approximately one gallon per acre. This was considered sufficient spreading because of the strength of the D.D.T. and the minute size of the particles.

Later sprayed and unsprayed samples were taken, and brought to the laboratory for observation. After consultation with leading entomologists, it is believed that the saw-fly-infected regions that had been sprayed were saved but the real results will not be known before this coming spring when the condition of the stand of trees will be again noted.

The saw-fly plague, if permitted to spread, could have a very serious economical effect both with regard to the forest areas and their beneficial necessity to adjacent agricultural lands.

STOOD GUARD OVER LIVE WIRE

AS a reward for diverting pedestrians from the path of danger when a live Hydro wire snapped and fell to the street, the Sudbury Hydro-Electric Commission have sent Conrad Labrich, a twelve-year-old newsboy, a letter of commendation and a cheque.

Heavy winds accompanied by a driving rain had caused a high tension wire to break, and the 4,400 volt current it was carrying could have killed any person who accidentally touched it.

Young Labrich, who was passing at the time, saw the wire fall to the pavement and sparkle dangerously. He stayed at his post, warning passers-by of the damage, until a Hydro truck arrived and removed the hazard. The reward followed a meeting of the local commission, where Mayor W. S. Beaton recommended that the boy's action be suitably recognized.

LAST HYDRO DEBENTURE RETIRED BY RIDGETOWN

Ridgetown Public Utilities Commission officially marked the retiring of its last Hydro debenture with an official ceremony that took place in the local council chambers on December 18.

Acting as master of ceremonies, commissioner A. E. Riebel headed the delegation of past and present commissioners comprising Arthur Orendorff, Archie Warwick, Robert Stokes one of the original signers of the debenture in 1916, Russell W. Clark, Fred Kennedy and Andrew T. Ward.

E. A. Hodgson, the superintendent, read a history of the town's public utilities as prepared by O. K. Watson, one of the original signers of the debenture, who was unable to attend. It showed how before the time of Hydro, electricity had been supplied by a steam generator, and that in 1916 the town entered into a contract with The Hydro-Electric Power Commission of Ontario. A statistical report given by commissioner Ward showed the growth of the local Hydro. In 1919 the plant was valued at \$28,000 as compared with \$138,000 in 1944, while the load increased from 88 horsepower in 1916 to a peak of 712 in 1944.

Over a thirty-year period, the number of street lights had increased from 147 to 419 and, at the same time, the number of Hydro users had increased from 278 to 754.

Mr. Ward also pointed out that prior to the forming of a Public Utilities Commission, the cost per kilowatt-hour had been around twelve cents. At present the average cost is 1.6 cents for domestic and 1.9 cents for commercial use.

DANCE AT HAMILTON

An announcement has been made that the Hamilton Hydro-Electric System will hold their annual at home at the Royal Connaught Hotel, Hamilton, on Friday, February 8, 1946. Committee in charge are: Ed. Ellerby, chairman; Margaret Kittson, secretary, and Art Craig, treasurer.

HYDRO TO BUILD NEW PLANT

(Continued from page 22)

whence a tunnel and penstock, having a combined length of half a mile, will lead southerly towards Lake Superior where the generating station will be located on the shores of Terrace Bay. The generating station will contain two vertical turbines operating under a head of approximately 300 feet, with directly connected generators and transformers, switching and the usual auxiliary equipment.

The Kimberly-Clark Corporation has advised the Commission that it will require 15,000 horsepower of primary power, and this will be supplied at the prevailing rates for power in the district.

Increased demands for power in the Thunder Bay district indicate that the full 45,000 horsepower, which the new Hydro development will make available, will be quickly taken up.

WEDDING BELLS RING FOR OMEA SECRETARY

One of the guiding lights behind the Ontario Municipal Electric Association and the only woman to hold office in the association, Kathleen Ciceri, the secretary-treasurer, will become Mrs. Glyn Kestell on January 23. Two weeks before Christmas she received her engagement ring.

Born in the city of Guelph, Miss Ciceri attended the Guelph Tytler School and later the Guelph Collegiate-Vocational Institute.

She launched her business career with a six months' bookkeeping position in a men's clothing establishment, following which she became associated with the late T. J. Hannigan of Guelph, who served as secretary-treasurer of the O.M.E.A. from 1914 until his death in 1940, and who was also for many years secretary-treasurer of the Municipal Hydro-Electric Pension and Insurance Committee.

Miss Ciceri acted as secretary to Mr. Hannigan for nine years, and upon his death she more or less "fell heir", as she expresses it, to the positions he had held. In addition to the O.M.E.A. and pension and insurance offices, Mr. Hannigan was secretary-treasurer of the Simcoe Tobacco Plantations Limited, and this position was also passed along to Miss Ciceri. She was subsequently made official secretary-treasurer of the O.M.E.A., and of the tobacco firm, and she continued as acting secretary-treasurer of the pension and insurance committee.

Although her three-fold position, in addition to her office work, has involved considerable travelling around the province in the course of a year, Kathleen says that the "rush" seasons of the various organizations fortunately did not coincide.

A versatile conversationalist and gracious in manner, Miss Ciceri has attended as many of the O.M.E.A. district meetings as possible and on many of these occasions she has been the only lady representative present.

Her leisure pursuits include dancing, skating and swimming, and from now on other questions will also occupy her attention.

Miss Ciceri, or Mrs. Kestell, is planning to relinquish some of her duties shortly after the convention in March.



BACHELOR IN NEED!

THE following application for electric service was received by one of the H.E.P.C. rural superintendents.—The Editor.

"Could i draw to your attention i need my bungalow wired so if you wish to see same don't be surprised if i am not at home when you come being a bachelor and no encumbrance only a cat."



Lighter Lines



"Of course, I wouldn't say anything about her, unless I could say something good—and boy—
IS THIS GOOD!"

Headquarters had decided to drop a platoon of Indian troops who had just come in from the hills in a forward fighting area in Burma. The planes were lined up on the air-strip, and the men detailed for the operation were preparing to march aboard, when a young jemadar stepped out and saluted the C.O.

"Colonel sahib, from what height are we to be dropped from the sky-ships?" he asked.

The colonel considered. "From about 2,000 feet, I should say."

"Very good," said the jemadar, with dutiful resignation. "The men have had a good training and they are very fit; but," he added, somewhat mournfully, "they had hoped it would not be more than 300 feet."

"Nonsense," laughed the C.O. "If you were dropped from so low a height as that, your parachutes would probably not open in time."

"So we're going to have parachutes, Colonel sahib! That makes it different."

After Christmas

The stores are full of ladies
Who haven't come to buy—
Of Marys, Janes and Sadies,
And now we'll tell you why.

Stockings their husbands bought them,
And gloves a queen might prize—
Alas, they must return them—
They're not the proper size!

* * *

Plumber—"Sorry, sir. I've forgotten to bring the necessary tools. I'll have to come back."

Professor—"Don't bother. I've had a lapse of memory, too. I've forgotten what I wanted you for."

* * *

"Rastus says Sambo done ketch him in Farmer Smith's hencoop."

"M-mm, boy! I s'ppose Rastus done feel 'shamed?"

"Nossuh. Sambo am de one to feel 'shamed. He can't explain how he done ketch Rastus dere."

* * *

DOWNWORDS PUZZLE

LAST MONTH'S SOLUTION

1	2	3	4	5	6	7	8	9	10	11	12	13	14
M	E	R	R	Y	C	H	R	I	S	T	M	A	S
I	N	E	O	E	A	O	A	N	E	I	U	A	
S	G	S	A	A	R	M	I	D	L	L	S	I	
A	L	P	S	I	E	N	I	F	L	T	T	N	
N	I	L	T	T	L	S	S	G	R	O	L	R	T
T	S	E	S	A	L	W	N	E	E	W	E	A	N
H	H	N	U	N	O	E	O	S	S	C	T	L	I
R	W	D	C	D	N	E	W	T	T	A	O	A	C
O	A	E	K	F	B	T	S	I	R	N	E	S	H
P	I	N	L	L	E	H	H	B	A	D	K	I	O
I	N	T	I	O	L	O	I	L	I	L	I	A	L
S	U	L	N	U	L	M	N	E	N	E	S	N	A
T	I	T	I	G	R	S	E	E	S	T	S	S	S



VIC
HERMAN
NO-12

"Here's a maid all your married friends will be AFRAID to swipe!"

A visitor who had tried unsuccessfully to obtain accommodation in several of the city's hotels was walking dejectedly along the waterfront to where he had parked his car, when a shout for help reached him.

It was a drowning man, and the visitor was about to dash off for assistance when a thought struck him.

When the man's head came up for the second time, he cupped his hands and called out to him:

"Citizen or stranger?"

"Stranger," gasped the man as his head disappeared again.

The visitor waited patiently until the drowning man's head came up for the third time.

"Where are you staying?" he asked.

"At the Wayfarers' Arms," spluttered the unfortunate as he sank for the last time beneath the waves.

The visitor hurried off.

Arrived at the Wayfarers' Arms, he learned to his chagrin that the room he had hoped to secure had just been taken by another witness of the tragedy.

#his and #hat

By The Editor

A NEW year has been born but we still find it difficult to refrain from writing 1945 at the top of letters. . . . In the year just closed victory was achieved on the battlefield and during the present year that victory has to be consolidated. . . . With atomic power now a reality and a compelling force in international relations, the nations of the world must find a basis for permanent peace or else go to pieces. . . . And with Christmas still a vivid memory, the first step towards that peace might be a determination not to lock up the Christmas spirit with Christmas cards and decorations. . . . It can be the start of a great new era if everyone takes that spirit into the home, the factory and the office and into the legislative halls . . . throughout the year and not for just a day.

* * *

WE HAD the happy experience of renewing acquaintance with **WILLIAM (BILL) DOWDS**, superintendent of the Patricia District, and his wife, **DOROTHY**, who are at present on vacation in Toronto where their children, **DOREEN**, aged 15, and **DONALD**, aged 13, attend collegiate. They bring cordial greetings from all the Hydro folk at Ear Falls to the members of the Hydro family in Toronto.

SPEAKING ABOUT Ear Falls, **MARY DAMPIER**, a Commission nurse, will not readily forget the 125-mile trip by boat from Hudson to that colony just before the winter freeze-up last November. Regular plane transportation is, of course, suspended during the freeze-up and spring break-up periods when the folk at Ear Falls are practically isolated. Bill Dowds, accompanied by **OSCAR M. NYMARK**, an operator at Ear Falls who is also a skilled mariner, travelled in the Hydro

utility boat to meet Miss Dampier at Hudson. Half way back to Ear Falls, the trio ran into a pea-soup fog and had to tie up for the night at Manitoba Point. Making the best of things, they huddled up in various parts of the boat. (Reports indicate that Bill is a sound sleeper with the emphasis on the "sound!") Early next morning the fog had lifted and the journey was resumed, but their troubles weren't over. The party ran into a snow and sleet storm followed by strong winds and high seas which lashed over the boat. All in all, it was quite a moving experience but they all stuck to their guns, or rather the gunwale, until they reached Ear Falls where Miss Dampier remained on duty for over four weeks.

* * *

HON. HERBERT MORRISON, Deputy Prime Minister of Great Britain, was an interested visitor to the Commission's Queenston plant at Niagara Falls on January 9.

* * *

A VISITOR from the British Isles was telling us recently about that sense of humour which was very much in evidence in Britain during the dark days of the war. For example, there were many posters which urged people not to talk about military matters or the work they were doing. One of these posters read: "Be like dad, keep mum!" Then there was the newspaper headline which read: "If your house goes, give the post office your new address!" Our friend also told us about the little girl, an evacuee, who was moved from London to the country. The first night in her new home, she knelt down to say her prayers and the lady of the house heard her close with these words: "And, please God protect Daddy and Mummy from these German bombs and do, dear God, take care of yourself because if anything happens to you we're all sunk!"

MARY AINSLIE (Ontario Travel Bureau) tells us that floodlighting at Toronto Ski Club, 20 miles north of Toronto, provides three miles of well-illuminated hills and fairways that will accommodate up to 2,000 persons who enjoy night skiing . . . Learners will, no doubt, appreciate anything that will lighten the falls.

* * *

DOROTHY HARSTONE, Reg. N., who served the Commission as nurse in the medical section of the employees relations department during the war period, has gone to the Star to take over the duties of industrial nurse. On January 8, about 300 of her many friends in the Commission were present when Miss Harstone was the recipient of a handsome purse which contained another tangible expression of the high esteem in which she is held.

* * *

ANOTHER SIGN of the times is the appearance of the "mouton lamb" coat. We have often eaten "mouton lamb", but until a few days ago, it had not been our privilege to be confronted with the fleece of this intriguing creature. It proved quite a pleasant surprise, and we may assume from the name that this new fashion in feminine apparel will help to sustain the proper dignity of maturity while at the same time imparting to the wearer a "je ne sais quoi" air of friskiness and youth.

* * *

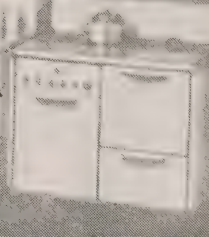
IT WAS John Stuart Mill who wrote these words: "A people may prefer a free government but if, from indolence or carelessness, or cowardice or want of public spirit, they are unequal to the exertions necessary for preserving it . . . they are unlikely long to enjoy it."



Hydro HOME FORUM

by Edithemma Muir

HOME ECONOMIST



IT'S a thrilling experience to meet women who are doing such a magnificent job of homemaking at remote outposts of civilization—right in the bush of Northern Ontario. These homemakers are industrious, ingenious and happy, in fact they're far happier than many of their city cousins. We saw and talked to many of these fine women during a trip through Hydro's Patricia District, and we were in their homes—in the Commission colonies at Ear Falls and Rat Rapids, in patrolmen's homes and in many of the houses which make up the mining communities in the Red Lake area.

A Wonderful Country

We came back with the hope that we might, somehow, be able to express and pass along to our readers the spirit we found evident in this wonderful country. It's a spirit which cannot be adequately expressed in the words "cheerful" and "friendly." It's more than that. In each little community we visited we were conscious of that "one for all and all for one" atmosphere.

Many of these homes, remember, are just as modern as any you'll find in any progressive city and others, although not modern in the accepted sense of the word, are homes in the truest sense.

We remember a visit to Gladys' home—an immaculate place with hardwood floors and all conveniences, right in a great clearing in the bush. Not only was the home well-arranged but she had a system of working about with ease. Cheerfulness in the home was partly due to the fact that the homemaker worked in her kitchen as if she were in a show window. Everything was cleaned and put away as she did each job. And Gladys looked so

neat and clean herself. Due credit was given her mother for this training. We realized why the children called her Aunt Gladys when they came to the playground opposite her kitchen window and noticed how she directed their play as she scooted out to help them on a swing or build a castle in the sand. Her friendliness was reflected in her smile and readiness to help in all community endeavours. In these activities, and in their day-to-day homemaking tasks, these happy women of the North are too busy to brood over troubles.

In a more isolated place we met "Teacher". The community comprised three log cabins that looked as if they had been dropped from the sky onto the northern bushland. The surroundings were so rocky, it was necessary to transport earth from the lakeshore for the garden plot. However, the countryside was covered with bushes which bore fruit—the blueberries and rose haws which the mother and children picked and preserved. Her children and the neighbor's children were taught school in her home. Using the correspondence course and a large blackboard on her kitchen wall the mother instructed her class and at the same time, kept a watchful eye on the meal being cooked for her family. "Teacher" was particularly interested in ways to stimulate health rules, nutritional facts, and create a desire for good music. They tuned in the radio for history and music lessons—and wished there were more of these educational programs in Ontario.

While we visited, the children demonstrated their ability in play—a fine skipping routine, and a hobby of the neighbour's little girl — a carefully sewn quilt.

The third homemaker was one whose home was bordered by peren-

nial flowers blooming at the door and a big garden filled with lush produce. "Mother" was the type who loved her children and her neighbours, the kind of person who had learned to live among people and accept everyone as her friend instead of trying to "cultivate" aristocratic and influential people as friends. Mother Wager displayed the faculty of living unselfishly for her husband and children. There was proof of her effort in providing an ample supply of nutritious food. For instance, we saw with amazement fifty jars of preserved wild strawberries which the children had helped to pick and hull.

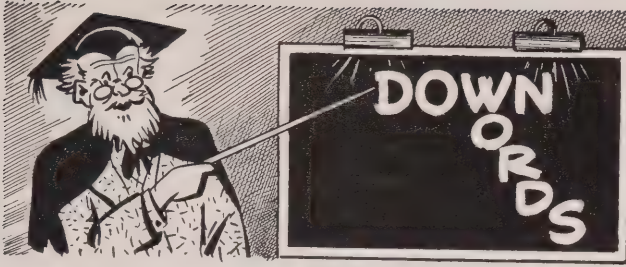
Recognizing that good health is an asset to happiness, these mothers consider a medical check-up essential; they realize that "an ounce of prevention is worth a pound of cure." And since food rules are a part of their health plan, their families are protected from common ailments.

Happy Homemakers

These are typical North Country, or bush country, homemakers. They are happy and make the best of the equipment they have and, in many cases, with the help of their husbands, they improvise and fashion all kinds of novel gadgets which help make living more comfortable and modern.

These women, in most cases, have a very keen sense of humour; the ability to puncture their own pomposity; the serenity to accept cheerfully the things they cannot change; the courage to change things that need changing and the intelligence to know the difference.

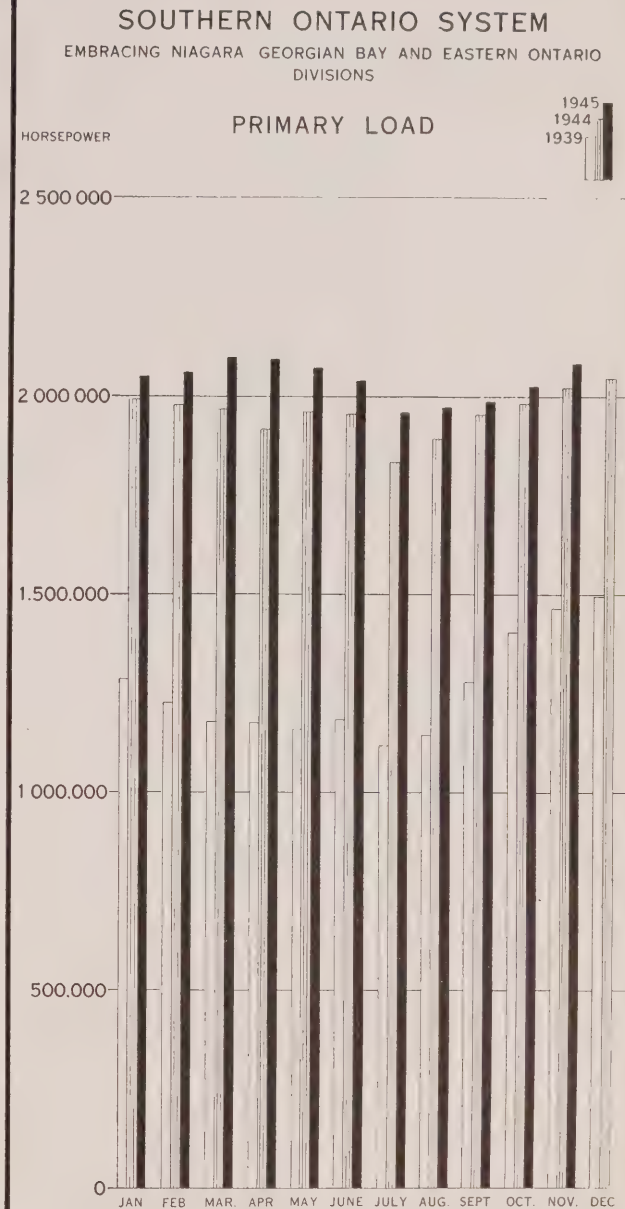
One can learn a great deal from these "down-to-earth" folk who are in the forefront of the modern pioneers who are helping build an empire of the future in Ontario's great Northland.

[illegible]

“HAPPY New Year to all Downwards fans,” chuckled Professor P. (for Peter) Perplexus. “And I don’t mean *downwards*. We must be pressing up, and up and up in this year of grace 1946 to higher and higher peaks of endeavour. The lads and lassies in the schools must settle down to serious study, and statesmen—hem—hem—who carry the burden of Atlas on their shoulders, must stiffen their knees and try to make a better go of it. . . . You’ve all read about Hydro’s proposed new waterpower developments on the Ottawa river near Des Joachims? Well, now, there has been a lot of argument about how this name should be pronounced. So we’ve hung out the ‘day’s washin’ on the line, and it’s up to you to puzzle out what we’ve got there. Ho ho! Ho ho! High living and plain thinking, or I’d never have thought of that one.”

DEFINITIONS

1. Preliminary operation to building a dam.
2. The steep bank of a river below a waterfall or rapid.
3. Air justly affected by members of the Canadian Upper House.
4. Deceased Ottawa Lumber King.
5. Hydro's magical password.
6. They belong to the leading Indian racial stock in Canada.
7. Making two or more out of a famous French Explorer.
8. What Hydro is doing to horsepower.
9. Favorite sport in the "good old days" on the Ottawa river.
10. Year of completion of the Rideau Canal.
11. Mohawks, Oneidas, Onondagas, Cayugas, Senecas and Tuscaroras.



PRIMARY LOADS

AREA SERVED BY	MAXIMUM 20-MINUTE PEAK H P		PER CENT INCREASE
	NOVEMBER, 1945	NOVEMBER, 1944	
SOUTHERN ONTARIO SYSTEM . .	2,082,095	2,023,110	+ 2.9
THUNDER BAY SYSTEM	129,088	126,206	+ 2.3
NORTHERN ONTARIO PROPERTIES	213,212	198,139	+ 7.6
TOTAL . .	2,424,395	2,347,455	+ 3.3

PRIMARY AND SECONDARY LOADS

SOUTHERN ONTARIO SYSTEM	2,192,920	2,100,992	+ 4.4
THUNDER BAY SYSTEM	143,163	134,450	+ 6.5
NORTHERN ONTARIO PROPERTIES	<u>289,244</u>	<u>266,102</u>	+ 8.7
TOTAL	2,625,327	2,501,544	+ 4.9

MUNICIPAL LOADS, OCTOBER, 1945

SOUTHERN ONTARIO SYSTEM NIAGARA DIVISION (25-Cycle)

	H.P.	Popula- tion		H.P.	Popula- tion		H.P.	Popula- tion
Acton	1,830	1,903	Erie Beach	22	21	Palmerston	681	1,400
Agincourt	292	P.V.	Essex	682	1,886	Paris	2,084	4,717
Ailsa Craig	147	487	Etobicoke	10,953	V.A.	Parkhill	286	1,029
Alvinston	141	649	Exeter	853	1,654	Petrolia	1,090	2,768
Amherstburg	1,131	2,704	Fergus	1,553	2,759	Plattsville	167	P.V.
Ancaster Twp.	596	V.A.	Fonthill	255	860	Point Edward	1,300	1,199
Arkona	72	403	Forest	692	1,562	Port Colborne	2,278	6,928
Aurora	1,576	2,821	Forest Hill	9,220	12,172	Port Credit	1,219	1,934
Aylmer	1,184	1,985	Galt	12,346	15,126	Port Dalhousie	1,164	1,599
Ayr	269	760	Georgetown	2,226	2,452	Port Dover	646	1,790
Baden	678	P.V.	Glencoe	257	763	Port Rowan	140	700
Beachville	737	P.V.	Goderich	1,779	4,674	Port Stanley	503	824
Beamsville	652	1,227	Granton	68	P.V.	Preston	4,368	6,656
Belle River	245	1,200	Grimsby	1,111	1,988	Princeton	143	P.V.
Blenheim	733	1,873	Guelph	12,738	23,074	Queenston	136	P.V.
Blyth	158	662	Hagersville	1,326	1,524	Richmond Hill	662	1,295
Bolton	257	629	Hamilton	159,408	164,719	Ridgetown	693	1,986
Bothwell	157	683	Harriston	518	1,292	Riverside	1,700	5,235
Brampton	3,545	6,157	Harrow	771	1,092	Rockwood	193	P.V.
Brantford	22,960	31,622	Hensall	229	686	Rodney	187	758
Brantford Twp.	1,836	V.A.	Hespeler	2,971	2,938	St. Catharines	27,011	34,541
Bridgeport	249	P.V.	Highgate	102	322	St. Clair Beach	120	138
Brigden	106	P.V.	Humberstone	593	2,831	St. George	210	P.V.
Brussels	191	784	Ingersoll	3,601	5,757	St. Jacobs	384	P.V.
Burford	293	P.V.	Jarvis	198	513	St. Marys	1,728	4,009
Burgessville	60	P.V.	Kingsville	768	2,453	St. Thomas	9,012	17,045
Burlington	2,023	3,925	Kitchener	30,535	35,465	Sarnia	7,482	18,599
Burlington Beach	609	1,474	Lambeth	165	P.V.	Scarborough Twp.	6,528	V.A.
Caledonia	465	1,430	LaSalle	386	907	Seaforth	1,066	1,782
Campbellville	57	P.V.	Leamington	2,480	6,048	Simcoe	3,353	6,304
Cayuga	180	700	Listowel	1,581	2,984	Smithville	202	P.V.
Chatham	8,217	17,184	London	44,650	81,567	Springfield	91	382
Chippawa	455	1,228	London Twp.	722	V.A.	Stamford Twp.	3,990	8,275
Clifford	128	491	Long Branch	1,824	4,258	Stoney Creek	321	933
Clinton	733	1,879	Lucan	220	643	Stouffville	389	1,198
Comber	173	P.V.	Lynden	135	P.V.	Stratford	8,280	17,163
Cottam	107	P.V.	Markham	461	1,175	Strathroy	1,663	2,834
Courtright	63	355	Merlin	112	P.V.	Streetsville	281	701
Dashwood	129	P.V.	Merritton	10,542	2,916	Sutton	323	949
Delaware	92	P.V.	Milton	1,553	1,915	Swansea	3,600	7,100
Delhi	670	2,430	Milverton	536	994	Tavistock	702	1,080
Dorchester	143	P.V.	Mimico	3,645	9,055	Tecumseh	561	2,391
Drayton	139	528	Mitchell	852	1,670	Thamesford	302	P.V.
Dresden	538	1,525	Moorefield	57	P.V.	Thamesville	290	816
Drumbo	110	P.V.	Mount Brydges	127	P.V.	Theford	147	598
Dublin	56	P.V.	Newbury	41	298	Thorndale	92	P.V.
Dundas	3,421	5,245	New Hamburg	700	1,441	Thorold	3,574	5,284
Dunnville	1,636	3,916	Newmarket	2,225	3,800	Tilbury	1,169	1,923
Dutton	296	830	New Toronto	12,002	9,469	Tillsonburg	1,743	4,602
East York Twp.	12,059	41,578	Niagara Falls	12,334	20,371	Toronto	403,408	657,612
Elmira	1,489	2,069	Niagara-on-the-Lake	1,067	1,764	Toronto Twp.	4,407	V.A.
Elora	511	1,185	North York Twp.	11,592	V.A.	Wallaceburg	5,413	4,802
Embro	168	420	Norwich	510	1,301	Wardsville	65	221
Erieau	171	218	Oil Springs	193	541	Waterdown	334	867
			Otterville	130	P.V.	Waterford	559	1,294
						Waterloo	6,714	8,968
						Watford	432	1,023

MUNICIPAL LOADS, OCTOBER, 1945

	H.P.	Popula- tion		H.P.	Popula- tion		H.P.	Popula- tion
Welland	11,489	14,899	Neustadt	48	43	Kemptville	435	1,230
Wellesley	134	P.V.	Orangeville	953	2,558	Kingston	17,774	29,545
West Lorne	282	768	Owen Sound	7,355	13,559	Lakefield	486	1,301
Weston	5,432	7,234	Paisley	191	530	Lanark	118	686
Wheatley	228	761	Penetanguishene	1,220	4,177	Lancaster	63	570
Windsor	52,182	118,040	Port Carling	208	520	Lindsay	3,444	8,345
Woodbridge	761	1,100	Port Elgin	627	1,415	Madoc	259	1,130
Woodstock	8,699	12,339	Port McNicoll	103	950	Marmora	189	1,004
Wyoming	115	538	Port Perry	374	1,175	Martintown	51	P.V.
York Twp.	25,113	77,175	Priceville	10	P.V.	Maxville	130	811
Zurich	149	P.V.	Ripley	137	420	Millbrook	152	749
(66⅔-Cycle)			Rosseau	33	305	Morrisburg	404	1,484
Bronte	249	P.V.	Shelburne	336	1,053	Napanee	1,672	3,241
Oakville	1,792	4,243	Southampton	510	1,467	Newcastle	242	701
Trafalgar Twp.	784	V.A.	Stayner	329	1,106	Norwood	193	710
GEORGIAN BAY DIVISION			Sunderland	114	P.V.	Omeme	224	630
(60-Cycle)			Tara	144	510	Orono	117	P.V.
Alliston	532	1,700	Teeswater	206	973	Oshawa	17,505	26,610
Arthur	212	1,089	Thornton	53	P.V.	Ottawa	42,240	150,816
Bala	181	355	Tottenham	174	532	Perth	1,941	4,187
Barrie	5,135	9,599	Uxbridge	455	1,480	Peterborough	17,662	24,977
Beaverton	369	941	Victoria Harbour	105	979	Pictou	1,679	3,400
Beeton	110	617	Walkerton	1,246	2,534	Port Hope	2,827	4,997
Bradford	313	1,041	Waubaushe	133	P.V.	Prescott	1,545	3,318
Bechin	50	P.V.	Warton	432	1,750	Renfrew	211	5,673
Cannington	245	761	Windermere	35	117	Richmond	81	428
Chatsworth	120	333	Wingham	791	2,149	Russell	92	P.V.
Chesley	629	1,812	Woodville	87	439	Smiths Falls	3,363	7,741
Coldwater	225	545	EASTERN ONTARIO DIVISION			Stirling	404	947
Collingwood	2,607	6,249	(60-Cycle)			Trenton	5,468	8,183
Cookstown	111	P.V.	Alexandria	387	1,976	Tweed	334	1,181
Creemore	163	661	Apple Hill	54	P.V.	Warkworth	99	P.V.
Dundalk	244	686	Arnprior	1,459	4,019	Wellington	389	948
Durham	419	1,874	Athens	139	626	Westport	135	725
Elmvale	218	P.V.	Bath	49	325	Whitby	1,863	4,236
Elmwood	67	P.V.	Belleville	8,722	15,498	Williamsburg	130	P.V.
Flesherton	84	452	Bloomfield	161	636	Winchester	382	1,017
Grand Valley	197	645	Bowmanville	3,474	3,850	THUNDER BAY SYSTEM		
Gravenhurst	1,536	2,261	Brighton	556	1,462	(60-Cycle)		
Hanover	1,619	3,190	Brockville	5,720	11,112	Fort William	17,692	30,370
Holstein	22	P.V.	Cardinal	380	1,602	Nipigon Twp.	289	V.A.
Huntsville	1,356	2,943	Carleton Place	1,921	4,143	Port Arthur	26,343	24,217
Kincardine	837	2,483	Chesterville	355	1,094	NORTHERN ONTARIO		
Kirkfield	27	P.V.	Cobden	149	643	PROPERTIES		
Lucknow	407	856	Cobourg	2,505	5,907	Nipissing District		
MacTier	127	V.A.	Colborne	300	960	(60-Cycle)		
Markdale	212	776	Deseronto	289	1,002	North Bay	5,638	16,013
Meaford	846	2,759	Finch	111	396	Patricia District		
Midland	4,946	6,754	Frankford	188	1,095	(60-Cycle)		
Mildmay	165	764	Hastings	186	823	Sioux Lookout	398	1,967
Mount Forest	617	1,936	Havelock	238	1,103	Sudbury District		
			Iroquois	321	1,123	(60-Cycle)		
						Capreol	310	1,660
						Sudbury	12,064	36,724

What's the freshest product that you use every day?

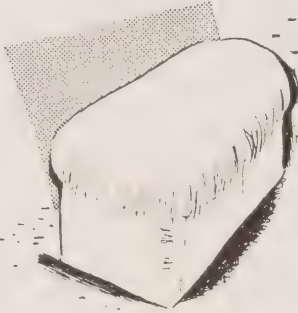
it's **NOT** milk



it's **NOT** eggs



it's **NOT** bread



With a bin full of coal and a larder full of food, you might well face a cold week-end with confidence. The fact that you do not have a bin full of electricity somewhere does not worry you. Hydro has proved to be so dependable. Yet, electricity cannot be stored . . . must be made and delivered the very instant you use it. That is "Hydro Service".

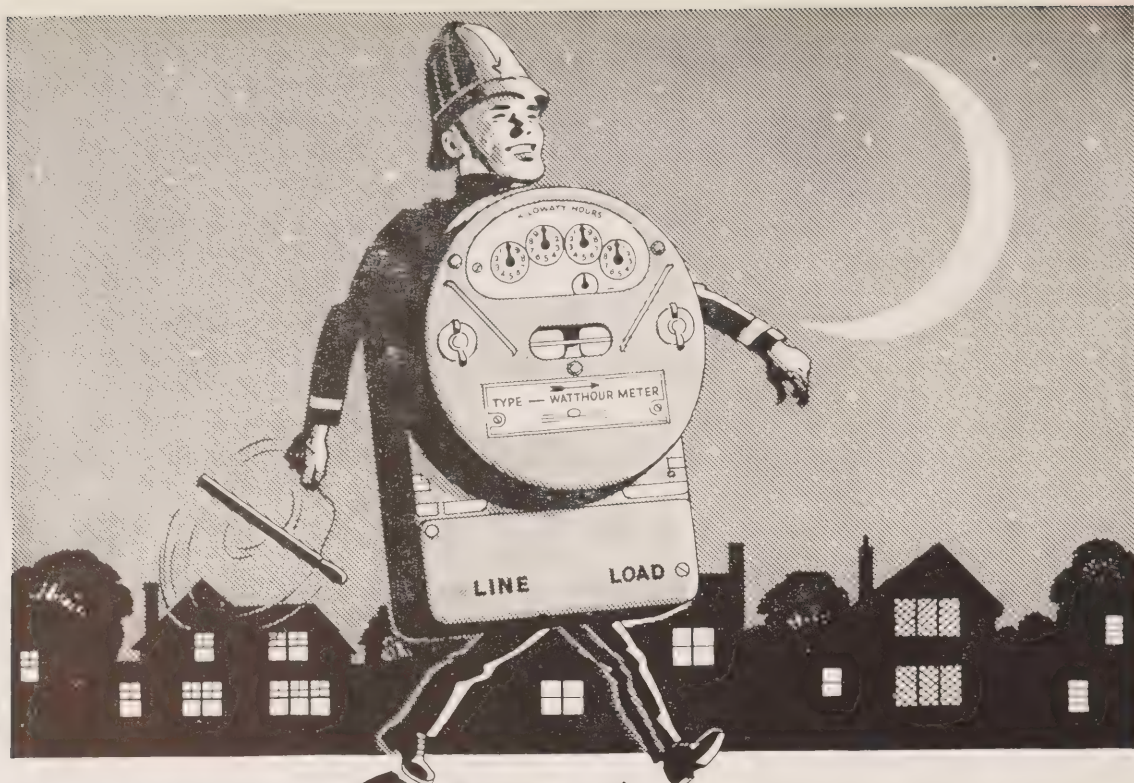
Suppose it is 2 a.m. The baby has just fallen out of its crib. Half awake, you reach for a switch. You want light fast. You get light instantly. Yet the electricity that lights the lamp is made *after* you flip the switch . . . made at the source of water-power, perhaps hundreds of miles away. It flashes to you through many miles of transmission lines, through transformer and distribution stations, and you use it before the water that makes it can leave the powerhouse. One single break or failure in all those miles of wire and equipment might cut off your light . . . and newspapers would write about it, it would be so unusual.

To keep all these millions of dollars worth of equipment operating, with no mistakes or serious interruptions, is the continuous job of a large and wide-spread staff of watchful Hydro employees. Yet, the cost per unit of power is very low. Ontario power rates are among the lowest in the world. That is "Hydro Service".



HYDRO *News*

WAY UP NORTH



THE *Electric* METER Is for Your Protection

EVEN though your Hydro makes electricity available to you in Ontario at a very low cost, it is important that you pay only for the amount of power that you actually use. The electric meter on duty in your home, is your protection against paying for more than you consume.

Every one of some 800,000 meters in Ontario is tested and certified by a Dominion Government inspector at regular intervals to assure complete accuracy. Electric meters are among the finest of jewelled precision instruments . . . as constantly true as the finest watch.

For your protection, Hydro installs a separate meter, exclusively for your own

household. Having a meter of your own is the only possible way to be sure that you only pay for the electricity which you use. Imagine buying food from a merchant who weighs several people's orders at the same time, and splits the cost evenly regardless of the size of the orders! You want your order weighed individually when you buy food. When you use electricity your meter assures accurate individual measurement.

Low cost Hydro service in Ontario offers amazing comforts and conveniences. For your protection . . . so that you will pay for only the amount of Hydro you actually use, a Government Inspected Meter is installed for your own household exclusively.

**THE HYDRO-ELECTRIC
POWER COMMISSION
OF ONTARIO**



THE HYDRO - ELECTRIC POWER COMMISSION OF ONTARIO

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THE FRONT COVER



THIS month's front cover illustration shows one of many interesting camera impressions recorded in the vicinity of Hydro's generating plant at Ear Falls by J. H. Mackay of the Commission staff.

The dam, which is featured, is six hundred feet long and forty-five feet high. The water is conveyed from this dam through four wooden penstocks, each of which is 170 feet long.

Volume 33

February, 1946

Number 2

CONTENTS

	Page
English River - - - - -	2
Page Three - - - - -	3
North Of The Fiftieth Parallel - - - - -	4
O.M.E.A. Brief Against Additional Taxation - - - - -	9
Port Credit - - - - -	11
Proposed Frequency Change-Over - - - - -	14
Around The Hydro Circuit - - - - -	15
Current Topic - - - - -	16
Prized Possessions - - - - -	19
Engineers' Contribution To Victory - - - - -	21
O.M.E.A. and A.M.E.U. Programmes - - - - -	23
Quarter Century Club - - - - -	23
General Cramer's Association With Hydro - - - - -	26
Lighter Lines - - - - -	28
This And That - - - - -	29
Hydro Home Forum - - - - -	30
Downwards Puzzle - - - - -	31
Monthly Load Summary - - - - -	31
Municipal Loads - - - - -	32





* *Page Three* *

WHY KILL THE GOOSE?

DOES Hydro pay taxes? Should it be taxed? All the answers are given in the O.M.E.A. "Brief Against Additional Hydro Taxation" published in this issue of Hydro News.

Hydro is already paying more than \$3,500,000 annually in direct taxation. This fact, and many more, should be known by all Hydro Commissioners and employees. As President W. Ross Strike says: "This Taxation Brief, which has been submitted to the Ontario Government, is a *MUST* for all Hydro Commissioners. It should be read and re-read."

The submission forcefully emphasizes that any additional Hydro taxation would increase costs to rural consumers and adversely affect the interests of 900 municipalities co-operating in the development of power on a low-cost basis.

A warning is also given in the brief that, in many cases, arguments favouring taxation have been initiated by individuals or groups who are seeking to undermine Hydro in order to promote their own selfish interests.

The Commission is now compiling its 38th Annual Report. For nearly 40 years, by providing low-cost power, under moderate taxation, Hydro has been largely instrumental in establishing greater wealth in Ontario. We in Ontario, generally speaking, recognize the truth of the formula: "Wealth per capita equals horsepower per capita."

An examination of the productivity or wealth of a country such as India or China, as against Canada or the United States, will illustrate the fundamental part that the use of electricity plays in a country's national wealth. India and China, using very little electricity, are comparatively poor with low standards of living. Canada and the United States are comparatively rich with much higher standards of living. Canada with its ample hydro-electric supplies is in an enviable position—and Ontario with its low-cost Hydro possesses a concentration of wealth in successful industry, mining and agriculture.

It is self-evident that the provision of ample low-cost electric power exerts an enormous influence in increasing the wealth of the country, a wealth which becomes the basis for taxation. Any additional taxation on electricity therefore helps to "kill the goose that lays the golden egg." Why kill the goose?

As the brief points out: "The increased use of electricity by reason of its availability at a very low cost to all classes of consumers would bring with it higher standards of living, greater comfort and more employment, and thus bring greater improvements to our communities than would any additional amount taken from it in the form of taxes."

Why kill the goose?



THIRD ARTICLE

*By The
Editor*

BEFORE getting down to rock bottom in the mining business, in a very literal sense, one must first struggle into a cumbersome suit of rubber armour and don a stout, protective helmet to which is attached a fairly powerful flashlight whose batteries are encased in a container that fits on to one's back like a knapsack.

Hydro News found that, so far as a very green layman in these matters is concerned, the process of getting into this rather ungainly attire is one that calls for patience, perseverance, considerable dexterity and a little imagination.

"Underground" Impressions

This particular experience—adventure is perhaps a better word in describing one's first descent into the depths of a mine—occurred at the Pickle Crow gold mine whose operations, in common with those of other mines in this area, are paced by low-cost Hydro power. Such an adventure, undoubtedly, has a place among the highlights which are recorded in the present series of articles on the fast-moving trip of Hydro News through Ontario's Patricia District.

A trip to this great mining country would not be complete without getting a few impressions of what is going on underground. The opportunity to get these impres-

sions was presented to Hydro News by Alex Hattie, manager of the Pickle Crow mine, who was unable to suppress his amusement when his eyes lighted on an editor making a do-or-die effort to get into mucker's clothes, comprising two pairs of woollen socks, heavy rubber overtrousers, sweaters, a heavy rubber coat, whose sleeves, incidentally, completely covered the hands, a pair of long heavy, thick-soled rubber boots, and a wide-brimmed, rugged helmet. Once securely encased in the necessary outfit, the next and final move was the placing of the flashlight on the helmet and strapping the batteries over the shoulders.

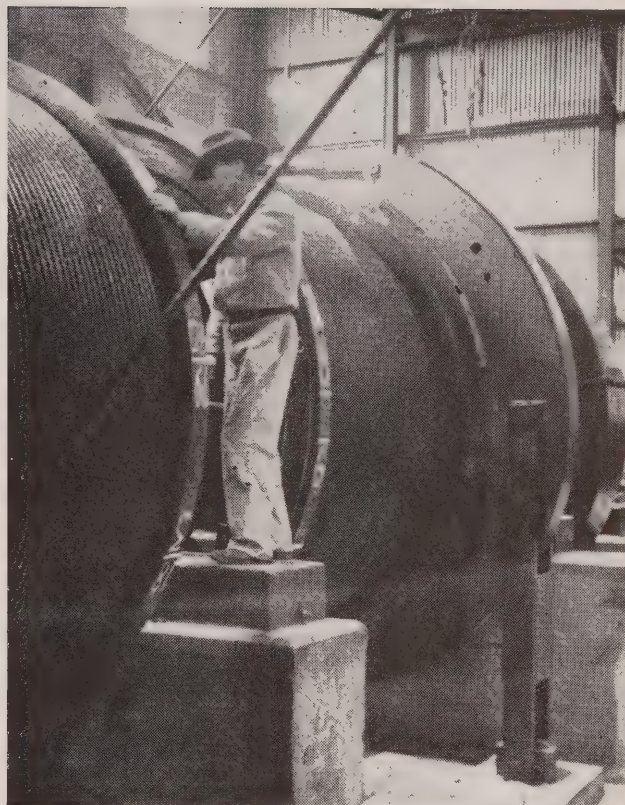
Receive Final "Briefing"

The first reaction—at least the reaction of Hydro News—as one makes the first effort to walk or propel oneself forward on two heavily-encumbered feet was that we had become some kind of an ungainly robot and that our new role called for expression, not in words but in the form of a few stentorian growls. The second reaction brought to mind stories of mediaeval knights in their suits of shining armour and to wonder how our tough, all-enveloping rubber coat compared with the jupon or surcoat of the Black Prince. We also remembered a suit of cuirassier's armour of the seventeenth century we had seen in an old castle. One glance in a cracked mirror, however, quickly dispelled any ideas of knightly splendour being associated with the toga we had donned.

At that moment, the impatient note of a buzzer heralded the arrival of the cage or elevator at the top of the mine shaft. After a final "briefing" the members of the



"DOWN UNDER" at the Pickle Crow gold mine, Hydro News got this interesting shot showing visiting "muckers" along with guide Bill Jamieson. One of the cars used for carrying ore is in the foreground and, at the back, are power units.



THIS ILLUSTRATION gives an interesting impression of a mine hoist cable which, in common with other mining equipment, is subject to regular and close inspection.

"going down" party lumbered from the office, through the spacious dressing quarters and towards the waiting cage. Everyone aboard, the door was closed with what seemed to be a startling note of finality and we were en route to the underground.

Feeling Of High Adventure

There was a something about that first trip down the dark, damp shaft that cannot be readily expressed in words. First and foremost is that feeling of high adventure which gets higher as the cage gets lower. The cage itself is built for utility and not for comfort. The light inside the cage throws a weird reflection upon the dark, wet wall of rock which seems to flash upwards as the cage goes down. For the first time, one is thankful for the very effective protection afforded by the heavy suit of rubber armour. The journey down seems to be endless—actually it takes only about two minutes—but in that time the sense of drama, mystery and uncertainty seems to grow upon one. There is that feeling which asserts itself as one passes from the known to the unknown—that feeling that you are leaving a world of light for a world of darkness, that you are going in the general direction of a place which is the opposite of heaven, and you begin to meditate.

Suddenly, the trend of one's thoughts is interrupted as the cage door is opened with a resounding clang and you find that you are not in a world of darkness for Hydro



HERE ARE some of the power units below the surface at the Pickle Crow mine. Hydro plays a vital part in operating the mill and pumping equipment, the cages and in providing light.



A POPULAR and widely known figure in mining circles in the North Country, R. E. Barrett, manager of the Central Patricia gold mine, is shown with his wife outside their attractive home which is located in close proximity to the mine.

power which provides the driving force for the cage is on hand to extend a bright welcome at the end of the journey. The air is good, thanks to the electrically-operated ventilation equipment and, all in all, things are not so bad.

At this point, Hydro News recorded a few interesting points which were mentioned by the guide, Bill Jamieson. The main cage at the Pickle Crow mine, it was learned, can carry ten people at one time and can hoist a load of 6,000 pounds. The cage travels at a rate of 1,200 feet per minute and it goes down to a depth of 2,450 feet below ground level. A shaft, by the way, can be sunk at the rate of about 200 feet a month. Below ground, miners can advance at an average rate of 6 feet each day, one shift drilling and breaking and another shift taking out the broken rock which is transported on an underground "rail-

way" to the hoist which is operated by a 600 horsepower motor.

These facts noted, the members of the party started towards one of the dark tunnels ahead and the spirit of adventure again asserted itself. Something of that zeal and high expectation which must have animated the soul of many an intrepid prospector in quest of gold, captures one's imagination with the realization that you are about to see this precious metal "in the raw."

Travelling On The Beam

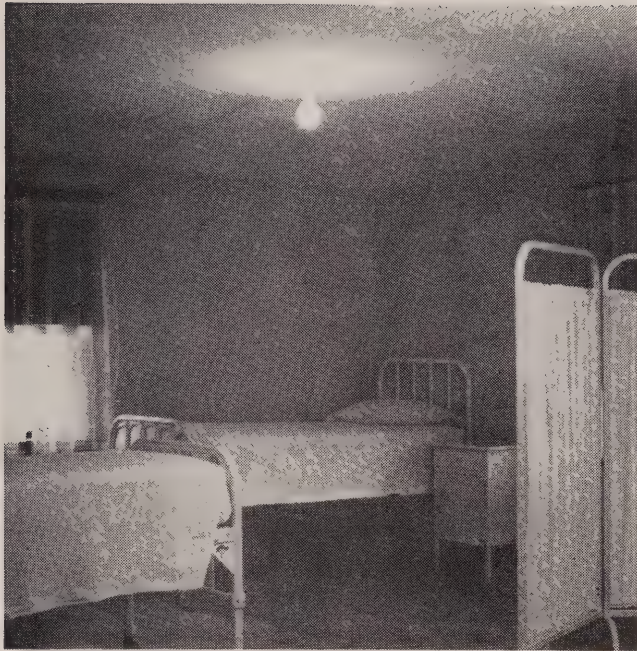
Once in the dark but fairly roomy confines of the shaft or tunnel, the importance of the high-powered flashlight becomes fully manifest. Here, in a very real sense, one travels on the beam for without the light, the narrow gauge car rails might cause considerable embarrassment. The going at times is a little tough for here and there one runs into water several inches in depth. At these points, one does not swing or lumber forward. One "sloshes" ahead and there is a certain rhythm, with water effects, if all members of the party can "slosh" in unison. What water there is, however, does not constitute a serious problem, thanks to the efficiency of the electrically-operated pumps.

Here and there, the beam of the flashlight picks out the dark entrances to other shafts and one is assailed by the feeling of being in a labyrinth and is prompted by a sudden desire to chalk arrows on the wall—just in case!

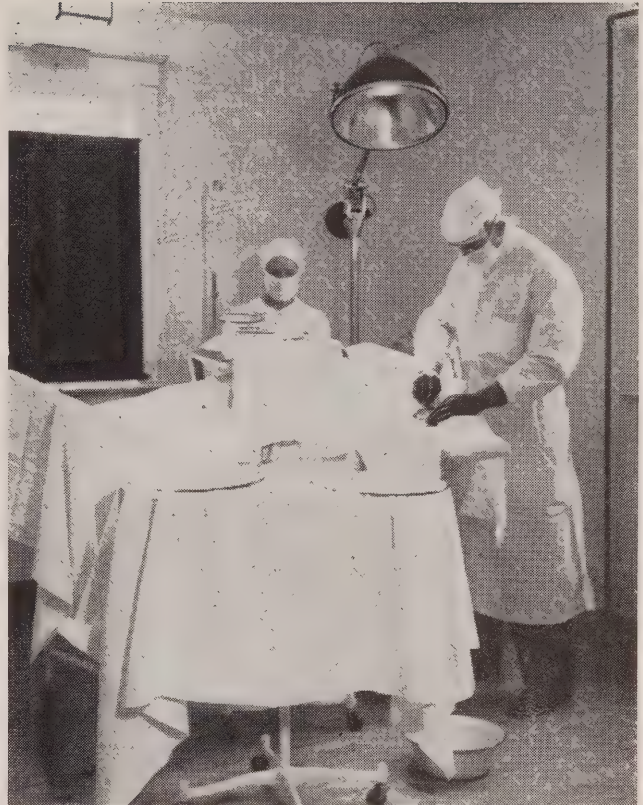
The guide stops the party and the next minute you find yourself climbing and burrowing upwards at a forty-five degree angle and then picking your way gingerly round what looks like an abyss of uncertain depth. Once safely over, you relax and find the guide busily using a small hand-pick. "Look," he exclaims suddenly as he



MEET ALFRED E. PUGSLEY, manager of the Hasage gold mine. While the mining business occupies most of his time, Mr. Pugsley likes to get in some motor boating—and he's quite a skilled sailor.



WHILE INSPECTING the hospital at Pickle Crow, Hydro News got this photograph showing a section of one of the bright, well-appointed wards.



THIS IS the operating room at the Pickle Crow hospital which is completely equipped for major surgery and which has the finest of X-Ray equipment.

breaks loose a piece of rock, "there's gold." Everybody stumbles round him and looks at the "find." "That," he repeats, "is gold," and he points to what looks like little flecks of gold leaf in the rock. This was it! And as we looked at these little flecks of gold embedded in the rock, we remembered stories of the Yukon and how men had lived, fought and died for possession of this precious metal. We thought of the heavy, glittering nuggets which are shipped to the Royal Mint and of the many skilled craftsmen who use gold in fashioning jewellery, watches, coins and other articles. Within a very few minutes we had thought of the many roles which gold plays in the lives of men and nations—roles ranging from the Gold Standard to rings and gold fillings for teeth. Speaking of the latter, we remember how, just recently, a condemned Gestapo agent was able to pay for his last meal on earth by giving up two of his fillings. Finally, we thought about the ultimate destiny of the particular pieces of gold in our hands and wondered if, some day, they would be included in a pot of gold some one might discover at the end of a rainbow.

Primary Crushing Done Underground

Once again, our conjectures were interrupted and we had to move along. On resuming the underground tour, Hydro News saw markings on the rock wall of the tunnel, indicating where samples had been taken and areas which had been selected for blasting or breaking ore. Incidentally, after the breaking has been done, the ore receives its primary crushing underground where muckers load it on to the electrically-operated cars.

Back at the cage again, Hydro News spent a few minutes inspecting the power unit which operates the



THESE LOAVES of bread looked very tempting as the chef removed them from the electric oven. Hydro power plays an important part in the mine cook kitchen where fine, wholesome food is prepared.



MEET JIM CULLEN, assistant patrolman at the Commission's Crow River transformer station and his son, Lee, aged 8.

ventilation equipment and lighting. On every hand, there was evidence of strong emphasis which is placed on observance of "safety first" principles and the care which is taken to assure the safe operation of all equipment.

On the surface once more, and enjoying the freedom of regular clothes, we were conducted on a tour of the mill where the importance of Hydro to the mining industry was very obvious. In addition to great crushing machines, conveyors and other electrically-operated equipment, there were enormous vats of oil, acids and other chemicals used in separating and processing the gold.

Hydro Important To Mining Industry

Hydro News learned that the ore which had received a primary crushing underground before being loaded on to the cars and brought to the surface, undergoes a secondary crushing in the mill for the purpose of what is known as "concentration." Succeeding processes separate the gold from other metals and, finally, there is the refining after which the gold, in the form of nuggets, is ready for shipment to the Mint.

Before the war, approximately 20,000 men were employed in the gold mining industry in Ontario and, during the war, that figure dropped to 13,000 men. It is predicted, however, that within the next five years, the

industry will absorb 6,000 men, bringing it back to approximately its pre-war peak. In all, it is reported, there are 34 producing gold mines in Ontario.

Have All Essential Amenities

In many areas where a number of mines are located, progressive towns have been established. In other areas, which are far removed from large centres of population, mining communities have all the essential amenities which contribute to the comfort and well-being of the residents. At a number of these communities, Hydro News saw the schools, hospitals and recreation halls. At the Pickle Crow hospital, which is under the direction of Dr. E. S. Connor, we found the finest of X-ray equipment and all the necessary equipment for major surgery. Mrs. Jean Prior, the matron, stated that there are, on an average, fifty cases a year and that there are from 12 to 15 births a year in that community.

Well-Equipped Hospital

Arriving at Central Patricia, we found another progressive gold mining area, a fine school and a well-equipped hospital where Dr. H. M. Connell, who is in charge, has

(Continued on page 24)



A MAN who knows the mining area like a book, Albert (Bert) Wager (above) is patrolman at Crow River transformer station and chief operator at Rat Rapids generating plant.

BRIEF STATES FURTHER TAXING OF HYDRO WOULD NOT BE IN PEOPLE'S INTERESTS

Submission Made To Ontario Government By Ontario Municipal Electric Association Says Hydro's Only Function Is Development And Distribution Of Electric Energy At Cost—Not Competing With Private Industry

"A BRIEF Against Additional Hydro Taxation" has been submitted to the Ontario Government by the Ontario Municipal Electric Association. Because the subject is one in which all Hydro municipalities are vitally interested, Hydro News publishes, here, the complete text of this brief.—The Editor.

BECAUSE recommendations have been made from time to time that additional taxation be imposed upon Hydro, this brief is submitted to show why any move along this line would not be in the interests of the people of the Province of Ontario.

It is also suggested that the Government analyze such recommendations very carefully. Some advocates have presented plausible arguments which, on the surface, appear to have some merit. In many cases, however, it has been found that these arguments have been initiated by individuals or groups who are seeking to undermine Hydro for their own advantage.

At the outset, it is important to bear in mind the principles upon which Sir Adam Beck originally built Hydro in this Province.

He was determined to preserve the water power resources of this Province for the people generally and to set up an organization that would distribute electric energy to the consumer at cost. He envisaged well-lighted homes, greatly increased industrial expansion and the burdens of the farmer lightened by the ever-increasing distribution of low-cost power. The dream of Sir Adam has today become a reality to the Province of Ontario.

The organization itself, which consists of a league of 900 municipalities, is designed and administered to distribute power at cost. From the outset it was a self-sustaining enterprise and it has never needed the expenditure of a dollar of the public funds, save in the extension of rural lines. It was not set up as a private corporation and, in fact, has very few if any points of comparison as such. The result is that attempted comparisons on that basis do not give a true picture and are quite deceptive.

Hydro Is Not Competing With Tax-Paying Business

The Hydro organization throughout the Province has no function save the development and distribution of electric energy at cost. It is not competing with private industry. It is continually doing its very best to lower the cost of power to industry and to commercial and domestic consumers so that they in turn will have more funds to meet their other obligations.

Hydro does not function for any particular class or group in the Province nor for any specific area. It has as its objective the providing of electric energy as it is required

in all parts of the Province at as low a cost as a province-wide distribution system can do it on a reasonably stable financial basis.

Hydro in Ontario is completely and wholly designed to bring the greatest possible benefit to all the people of the Province in the form of low cost electric power. It was they who caught the vision, financed it, took the risks and through the years built up an organization that is now the envy and admiration of those in other Provinces.

If the Government now opens the door for any further taxation it can very easily happen that other taxing authorities, urged and encouraged by other sources, may seize the opportunity to enter a very inviting field with possible alarming results.

A Factor In Cost Of Power

It is extremely important to remember that electric energy is furnished to each municipality under a signed contract on a cost basis, and the municipality in turn retails electricity to its consumers at cost. There are three main factors affecting the final cost: (1) (a) transmission or distance from source of power and (b) generating costs; (2) amounts of electric energy used by the municipality; (3) local distribution costs. These three factors vary with each municipality. Consequently, every municipality has a different financial picture and different retail rates. It is, therefore, very difficult, if not impossible, to create any sort of province-wide municipal tax levy that will give the same result in any two municipalities. Because retail consumer rates within each municipality are based upon the costs of operation peculiar to each local commission, a tax levy might be absorbed in one municipality without any material increase in consumer rates, while the same rate of tax levy in another municipality would immediately greatly increase the rates.

In this same connection, it should be pointed out also that in all municipalities the local rate for domestic consumers is fixed so low that there is very little cushion left for fluctuation and any tax levy would be bound to affect this consumer first.

Going back for a moment to the three main factors in the cost of power:—

1. (a) Transmission costs.

Once the basis of municipal taxation is broadened, then the transmission lines can be subject to tax. Taking the City of Toronto as an example, it uses power from both Niagara and the Ottawa River—in the cost of power to Toronto would have to be figured its proportion of the transmission taxation of all the intervening municipalities from both power sites in relation to the amount of power used by the city. This would obviously be very substantial

The same factor would be present in varying degrees in cost of power to all municipalities.

(b) Generating costs:

Again, such taxation could mean the taxation of power plants in municipalities in which they are located and the proportion of such taxes charged in the cost of power to the municipality served from the power plant directly in relation to the amount of power used. Toronto, Hamilton, London and Windsor would, for instance, be paying large subsidies to Niagara Falls.

2. Amount of power used:

The principle that the more electric energy used by a municipality the cheaper such energy becomes is reversed when you apply taxation, as its costs are bound to increase the costs of power directly in proportion to the amount of power used.

3. Local distribution system:

(a) Many municipalities have spent large sums of money on their distribution systems in order to give the best possible service and stability of supply to their consumers.

(b) In many other municipalities a substantial surplus has been built up to undertake such a programme as a post-war project.

Further taxation in (a) would penalize such municipalities and would cause in (b) municipalities a very cautious approach to spending money in better distribution services.

Hydro developments and distribution necessarily demand very large expenditures of capital in relation to revenue. To attempt additional taxation on an invested capital basis would create a very unfair situation when compared with any other business in the municipality.

Hydro Now Paying \$3,500,000 Per Year Taxes

It should not be forgotten that municipalities under the assessment act are now assessing both the local and Provincial Hydro commissions for (a) the value of land occupied, (b) the value of premises used by the local commission for the sale of electric appliances, and (c) the payments of a business tax on same. Moreover, the total direct taxes paid by Hydro during the year 1944 amounted to more than \$3,500,000.

Municipal Taxation Of Hydro Does Not Benefit Electric Consumer In Same Proportion

Taxes collected from the electric consumer are not returned to him in the same proportion as they are collected. Such taxes benefit the large property owner, the owner who does not live in the municipality, the owner who has a number of properties as an investment, the landlord at the expense of the tenant, the large manufacturer not using Hydro power, and penalize the man with a large family, a high electric bill and a small or modern home. In other words, a tax upon the consumer of electricity, like all taxes upon the necessities of life, hits the poor man hardest.

Additional taxation of Hydro in the municipal field would open the door to progressively higher assessments on Hydro property directly in proportion to the need of the municipal council for more funds and their aversion to an

increased tax rate. Such a condition would create a very uncertain and disturbing factor in determining each municipality's electric rates—rates which are now stable and reflect power at cost—a tradition in Hydro administration.

Property Of The Local Commission Becomes A Municipal Asset

It is constantly claimed in some quarters that the rate-payers of the municipality are entitled to some slice of the Hydro melon because the debentures issued in the first instance for each municipal distribution system were charged against the rateable property of such municipality. It is of course admitted by the same people that Hydro has not cost the municipal ratepayer one cent but still the risk great or small was there.

The fact is however that any small risk originally incurred by the municipal ratepayer has been repaid many times in that all the property of the local electric commission is rated as an asset of the municipality and shown in its balance sheet and becomes a decided advantage in the financial market when selling its debentures or otherwise obtaining credit.

Taxation Increases Cost Of Rural Hydro

The extension of rural Hydro is bound to be a very important factor in post-war planning. The cost of construction is bound to be high by reason of the length of line and material required for each consumer and the comparatively small amount of power used.

Any added taxation of Hydro cannot avoid directly adding to the already heavy cost of rural extension.

Services To The Community

Experience in municipal government tends to the belief that any added taxation of Hydro would not be reflected in a lower tax rate but would increase community services such as parks, play grounds, health programmes and the like, all of which are to be desired.

However, it is contended that the increased use of electricity by reason of its availability at a very low cost to all classes of consumers would bring with it higher standards of living, greater comfort and more employment and thus bring greater improvements to our communities than would any additional amount taken from it in the form of taxes.

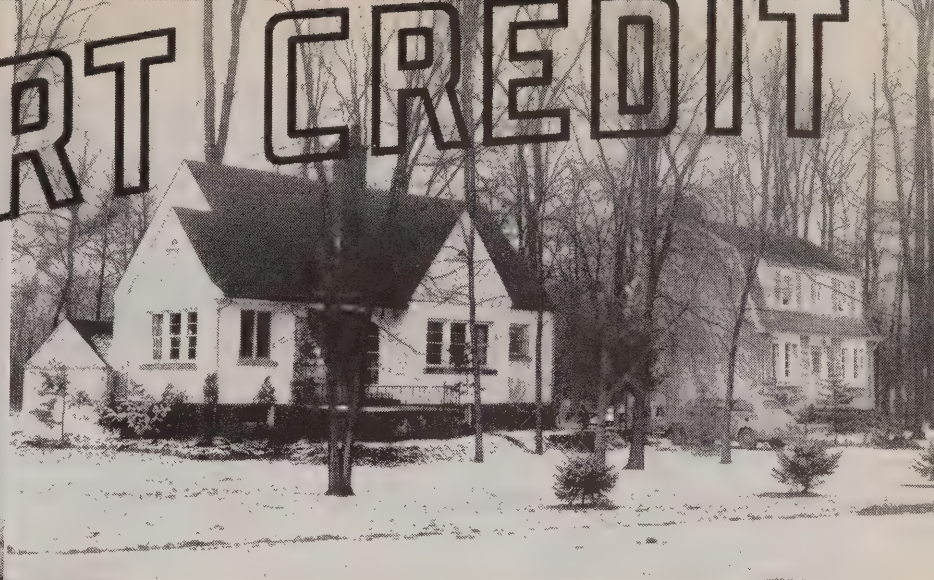
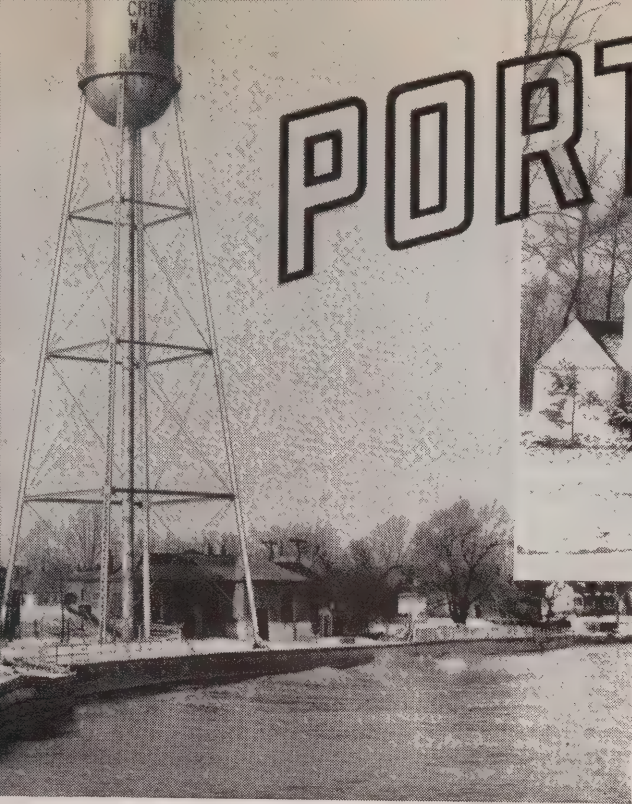
Location Of Province Industrially

The geographical position of this Province must also always be remembered in the consideration of this subject. To the east of us is a province with much greater potential water power resources, which are always a threat industrially. This is further aggravated by reason of the large sums of money spent in this same province by the Federal government and other public agencies for the new development of large blocks of power for war purposes, which after the war and even now are available to compete with Ontario in the industrial field. To the south of us is a highly industrialized nation with both potential water power resources and an enormous easily available coal supply.

In the competitive industrial field where, because of our present whole electrical set-up, including low-cost power

(Continued on page 24)

PORT CREDIT



A WELL-KNOWN landmark (left) which can be seen for miles is the Port Credit waterworks tower. On the right are shown some of the attractive homes in this picturesque community.

SITUATED at the mouth of the Credit river on the shores of lake Ontario, Port Credit is known as an "up-and-coming" municipality. Being only 12 miles west of the city of Toronto, this picturesque community has attracted many former city dwellers who have built fine, up-to-date homes there. Commuting on the morning and evening trains makes transportation easy for many of these people who do not drive.

While many drive to Port Credit by the Queen Elizabeth Highway, others prefer to take "the low road" along the Lake Shore Road which winds through some very picturesque sections of countryside. Many residents in this area have made their homes in delightful sylvan settings that are to be found off the highways and byways north of Port Credit. Some of the most arresting natural settings are tucked away in the vicinity of the Mississauga Road.

Because of the availability of low-cost Hydro power, the residents of this community have been able to enjoy all the conveniences of large-city dwellers. At the same time, they have the advantages of the country where they can have fine gardens, go for walks, have picnics or play golf or tennis.

The suburbanites in Port Credit also go in for plenty of inside hobbies, having well-equipped workshops in their basements where electricity is used to advantage.

Hydro had its inception in this community in 1912, when the local councillors on the board were: R. M. Parkinson, Fred Hamilton and H. R. Diltz.

Municipality's Early History

At the time, the average domestic monthly consumption was 23 kilowatt-hours, and the average cost was approximately 6 cents per kilowatt-hour. In line with the general trend in other Hydro municipalities there has been a steady decrease in the cost of service to consumers until, at the present time, the average domestic monthly consumption is 238 kilowatt-hours and the average cost

is 1.1 cents per kilowatt-hour. In 1913, the Port Credit Hydro-Electric System was serving 116 consumers, and today there are 743 consumers and the average monthly load is 1,360 horsepower. This municipality is in fine financial condition and, it is expected, that their final debenture payment will be made in 1948.

It is rather interesting to take a look at Port Credit's historical background. Statistics indicate that in the early days there was quite a large settlement of Indians in this neighbourhood and that about 1804 or 1805, a Colonel Ingersoll, generally conceded to be the founder of the village, set up a store there. This trading post, at the mouth of the river was, according to the records, a popular spot for the "Redskins" to receive credit—hence the origin of the name—Port Credit.

Only Harbour In County

It was also the only harbour or port in the county of Peel, and great quantities of grain, fruit and other farm produce were shipped from this area. Sometimes during the summer season steamboats would make two trips a day to Toronto, carrying consignments of strawberries, the growing of this fruit having been big business at that time. The Port Credit harbour was also used by the city of Toronto at times when it was not convenient for vessels to enter the Toronto harbour.

In the early settlement days, immense quantities of salmon were caught in the Credit river, and much of the fishing was done by the Indians. In fact, in 1820, a petition was presented to the Provincial Parliament that fishing rights be reserved for the Indians.

One of the names associated with the district is that of Rev. Peter Jones, whose father was of Welsh descent, and whose mother was a Mohawk Indian. Mr. Jones was appointed as a travelling missionary in 1828 and used



PORT CREDIT'S municipal office building where the affairs of the Hydro-Electric System are administered.



R. V. THORNE, secretary-treasurer of the Hydro system, took time off from his many duties to pose for the photographer.

to ride by horseback as far north as Holland Landing, and as far east as Picton.

Port Credit, in its early days, was recognized as a good place for fishing and shooting, and was a favourite resort for sportsmen from the surrounding country.

Fishing Industry Still Important

Although the harbour works in this section have fallen into disuse, the fishing industry is still important. The Good Rich Refining Company Limited, which benefits from low cost Hydro power, has quite a large sized plant in this community. The St. Lawrence Starch Company Limited, is also located there.

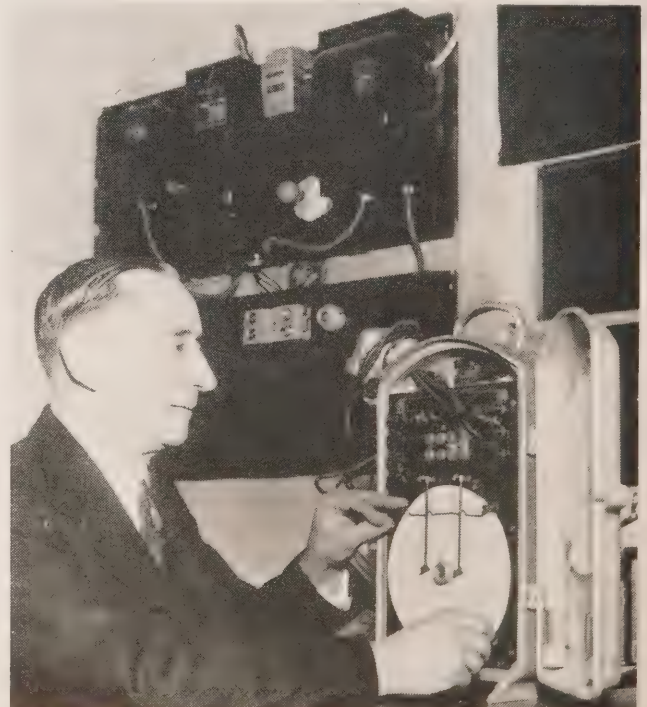
Port Credit, with a population of some 2,250 has over ten miles of transmission lines and is proud of its inter-switching system. Installed about six years ago, this system

can be paralleled with the Toronto township Hydro at any time and work carried out on the municipality's substation without any interruption to its consumers.

The affairs of the Port Credit Hydro-Electric System are ably administered by a committee of council comprising John G. Reid, chairman; R. E. Finkle and H. B. Corey, councillors; G. F. Skinner, reeve; E. S. McNeice, superintendent; and R. V. Thorne, secretary-treasurer.



WALTER BUSH, lineman (left), and his helper, Earl Leach, unload the Hydro truck after a busy day.



E. S. McNEICE, superintendent, is shown inserting a chart in a meter. On the wall to the left may be seen the water heater control system.

JUNIOR FARMERS SEE HYDRO EXHIBIT



HYDRO DISPLAYS some up-to-date electric farm equipment at the Rural Youth Conference held recently in the King Edward Hotel under the auspices of the Ontario Junior Farmers Association and the Junior Directors of the Ontario Federation of Agriculture. Left, G. W. H. Allen of The Hydro-Electric Power Commission of Ontario, demonstrating an interesting point in connection with an electric pump to Lois Wray, Port Perry; Jean Keffer, Maple; Walter Reesor, Markham; and Jesse Bryson, Woodbridge. Right, a general view of the conference in the process of watching a Hydro film.



LOCATED ON the shores of lake Ontario at Port Credit, the Good Rich Refining Company Limited (above), has a good-sized plant which is supplied with low-cost Hydro power.



A VIEW of the Port Credit Hydro-Electric System's substation with the fire hall on the far side.



THIS SHOT was taken in the waterworks building and shows one of the electrically-driven pumps.

TO PRESENT REPORT IN NEAR FUTURE ON PROPOSED FREQUENCY CHANGE

**Investigations Show That Advantages Of 60-Cycle Power Would Be Many—
Magnitude Of Undertaking And Need For Careful
Planning Emphasized**

PROBLEMS involved in a change-over from a 25-cycle to a 60-cycle frequency in the Niagara division of the Hydro system are now being studied in detail, and according to information gathered by Hydro-News, a report will shortly be presented upon which a decision will be based. It was pointed out, however, that The Hydro-Electric Power Commission of Ontario was created to serve the interests of the people of the province, and that in this, as in all its major activities, the Commission must be assured that change-over is in the public interest.

"Is it not in answer to an insistent public demand that the Commission is considering the change?" was a leading question asked by Hydro News.

Going To Be A Big Job

"That is quite true," was the reply. "But it must be remembered that the average consumer is unaware of the technical difficulties involved. Nor has he considered the question of cost. If carried out, it is going to be a very big job. Grouping domestic, commercial and rural consumers together, there are well over 600,000 Hydro consumers in what we call our Niagara Division. This is nearly 75 percent of all consumers in these categories in Ontario and about half of the equipment among domestic consumers will have to be adapted to the new frequency. Moreover, all the Commission's generating and transformer stations which deliver power in the area under consideration will have to be brought into line—quite an undertaking in itself."

Will Require Careful Planning

"You think, then, that the difficulties in making the change might outweigh the advantages that would be gained from it?"

"Not at all," was the reply. "If Hydro refrained from doing things because of the difficulties involved, there would be few major waterpower developments in the province of Ontario. Almost every work the Commission carries out is attended by difficulties. We are simply emphasizing the fact that the undertaking we are now considering will require careful planning. Once it has been carried out, there is no doubt that it will bring many benefits and advantages to both the consumer and the Commission. From a strategic point of view it would be a step towards the ideal of a uniform frequency which would greatly facilitate the interchange of power loads. So far as the consumer is concerned, the investigations now under way show clearly that the advantages of 60-cycle power would be many."

These benefits to the consumer are briefly summarized.

In the first place, the cost of 60-cycle equipment using inductive components, such as transformers and motors, is considerably lower than the cost of corresponding 25-cycle equipment. Obviously, there would be a definite saving to all users of motor-driven equipment, and this would be especially pronounced in the case of commercial and industrial consumers.

Would Eliminate Flicker

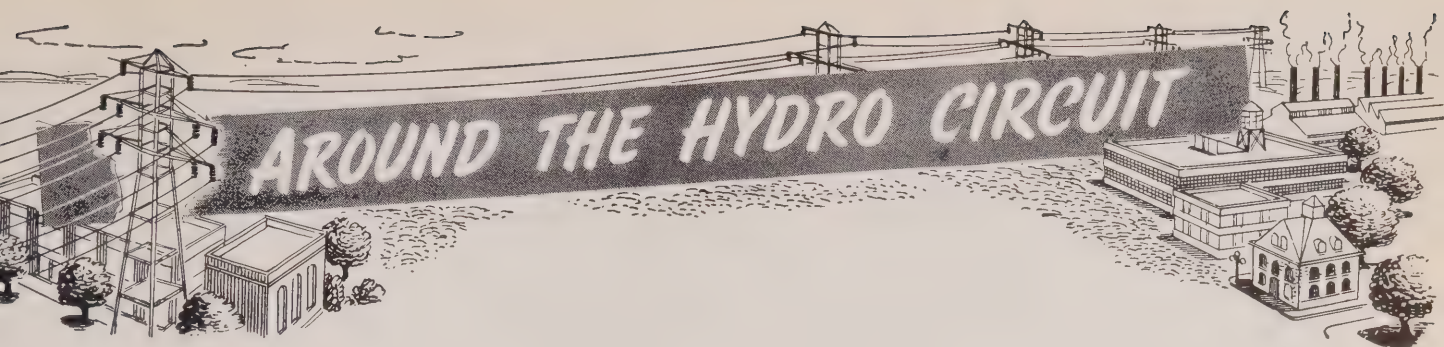
The introduction of 60-cycle power would obviously assure favorable lighting conditions since it would eliminate the flicker which has long been one of the popular objections to 25-cycle frequency. Further, electrical equipment of new design is usually developed originally for use on a supply frequency of 60 cycles. It is generally only after the equipment has been introduced and in use for some time in 60-cycle areas that it is made available for use on 25-cycle. This is particularly true of modern electronic devices such as television and F.M. radio, where frequency is a vital factor in operation. On 60-cycle, consumers would be able to enjoy the increased facilities for entertainment provided by these devices without delay. With 60-cycle frequency, consumers would also be able to install smaller and lighter equipment, and for industrial uses there would be a much wider selection of motor speeds.

Another advantage of 60-cycle power is that it would make electrical appliances of every type and variety readily available to the consumer—at least as soon as the manufacturer gets back into production—due to the fact that most consumers of electricity in the North American field are now on this frequency and new devices, naturally, are fashioned to their needs.

Additional Source Of Power

It is emphasized, however, that if the change is made, it would have to be undertaken gradually. The Niagara district extends from just east of Toronto to Windsor and from Niagara Falls northward into Huron county. It comprises the most densely populated and the most highly industrialized areas of Ontario, including the cities of Toronto, Hamilton, London and Windsor; and a vast number of motor-driven machines and appliances now adapted to a 25-cycle frequency would be involved. The 60-cycle equipment would have to be installed to replace existing 25-cycle equipment in groups at a time and this, it is obvious, could

(Continued on page 25)



JOHN GILLESPIE REID, chairman of the Port Credit Hydro-Electric System is a very busy person. Practising law in a thriving town should be enough for one man, but Mr. Reid is busy with Hydro activities and takes a keen interest in service clubs as well. Born in Toronto, he attended the University of Toronto and Osgoode Hall and was then called to the Bar. At the University his interests were in the sports line, notably rugby, hockey and track. Mr. Reid's family have played an interesting part in the history of western Ontario. His grandfather and great-uncle cut through the first road from Brampton to Orangeville, and his grandfather was the first clerk of the County of Dufferin. Previous to his present position as chairman, Mr. Reid was for two years an executive member of the Ontario Municipal Electric Association, District 6.



G. F. SKINNER, reeve of Port Credit and member of the Hydro Committee, has behind him an impressive record of public service. Since 1930 he has held a series of municipal offices including that of reeve and deputy reeve. As far as Hydro is concerned, he has been associated with it for the past twelve years, for four of these as reeve on the Hydro Committee. Mr. Skinner is a native of Schomberg, Ontario. Apart from his municipal work his chief interest is in show birds. His prize chickens have been shown many times and won various prizes for their owner, notably, the bronze medal from the World's Poultry Congress in Ottawa in 1927.



R. VIC. THORNE, secretary-treasurer of the Port Credit Hydro-Electric System is an Englishman by birth and education. He holds an enviable service record from the first world war. During the four years he saw fighting in France, Egypt, Mesopotamia and India, he was awarded the D.C.M. and was mentioned in despatches. In this war he again joined up and spent four years in the 2nd Battalion, Lorne Scots Reserve. He has held the position of secretary-treasurer of the local Hydro-Electric System for four and a half years. Mr. Thorne's hobbies take the form of various activities with service clubs and with choral work.

RALPH ERNEST FINKLE, councillor with the Hydro-Electric System at Port Credit is a native Torontonian. He received his education at Parkdale Collegiate and Shaw's Business College. He has recently finished three years in the armed services as corporal in the Lorne Scots Reserve. Time left over from his business life and his Hydro activities he devotes to his favourite sport, sailing.



EDWARD STANLEY McNEICE, of the Port Credit Hydro-Electric System, has been identified with Hydro over a number of years, fifteen years in part time work and for the past eight years as superintendent. Mr. McNeice was born and educated in Toronto where he took his engineering training. He is a member of the Professional Engineers of Ontario, and he has played an active part in civic affairs, having served since 1926 as school trustee, chairman of the Board of Education, councillor of the village of Port Credit, Utilities Controller A.R.P., and as a member of the special police squad. As a student his hobbies centred around sports, basketball, baseball and hockey. Nowadays, his chief interest is in his fine vegetable and flower garden.

HARVEY B. COREY, Hydro committee member, was born and educated right in Port Credit. He has served on the committee for three years and been its chairman for two of those years, 1943 and 1944. As well as his Hydro interests, Mr. Corey has been a member of the local municipal council since 1943. He comes honestly by his interest in civic affairs for he says that his father was a councillor in the village for ten years.



STANLEY W. CANNIFF, manager of the Ottawa Hydro-Electric Commission and president of the Association of Municipal Electrical Utilities, and **W. ROSS STRIKE**, president of the Ontario Municipal Electric Association, are both busy men these days, putting the finishing touches to the plans for the joint annual convention to be held on March 5 and 6 at the Royal York and King Edward hotels in Toronto.



READING THE meter in someone's basement is just a routine job for L. D. Bell of the Toronto Hydro-Electric System, but it means protection and accurate billing for the householder.

By Mildred C. Redmond, Hydro News

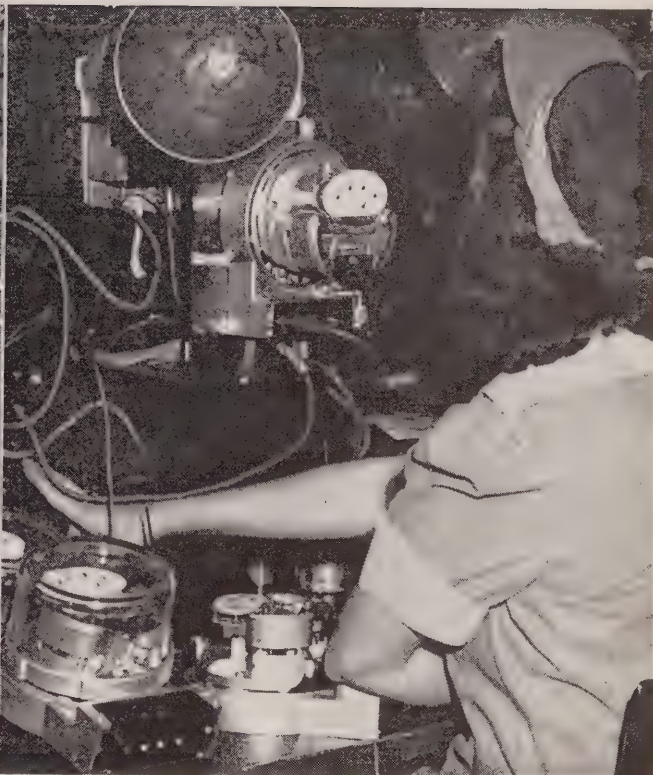
A KNOCK on the door—"I've come to read the meter, m'am." "Meter," one thinks vaguely, "oh yes, that black thing downstairs in the cobwebby corner by the trunks." And that, as far as most people are concerned, ends the subject of meters. They might be astonished to learn that the black box in the basement is, as a matter of fact, a precision instrument as finely and accurately constructed as the watch they wear on their wrists. Also that it is their guarantee that they are being fairly charged for the electricity which lights and runs their house. And not only is the meter made with clock-like accuracy, but the government stands by watchfully to see that it continues to run accurately so that there can be no overcharging on the part of the public utility, or tampering with the meter on the part of the consumer.

This may not seem so important to a citizen of this country, we are inclined to take our public services very

much for granted. But Hydro News had an interview with a European who has recently come to this country. He tells of the fantastic state of affairs in the electric utility in the country he has just come from. The electric company charged the most exorbitant prices, the electric bill for an average family for one month would amount to approximately one eighth of the entire family income. The citizens feeling that they were being used unreasonably got back at the utility by using various ingenious methods of stopping their meters for four days out of every five and so keeping their bills lowered to an amount they felt they could pay. Even at that of course, the minimum use of power was a very real luxury. Such a chaotic state of affairs is scarcely to the advantage of either a utility or the average citizen.

Hydro News recently had the opportunity of visiting

(Continued on page 18)



A WORKER (left) in Sangamo Meter plant is engaged in the delicate business of inspecting cyclometer register recording wheels. The girl to the right is checking the calibration of a watt-hour meter.



AN INSPECTION of one of the minute parts that go to make up a meter; one of the lower pivots is being made by the worker at the left. At the right the finished meters are being given a final testing on a multiple test rack.

(Continued from page 16)

a local plant, the Sangamo Company Limited, Leaside, that manufactures meters. It has the general appearance of a clock factory—the various parts of the meter are clock-like in detail and must be made with the same care of detail and accuracy. There is a “jewelled movement” as there is in watches, the jewel in this case being a sapphire. After the meter has been assembled it is checked and double checked for absolute running accuracy before it is sent out.

The simplest definition of a meter is that it is a measuring instrument. As soon as electricity started to be used in any quantity back around 1870, it became necessary to measure the amounts used in order to bill the consumers fairly. The first patent for a meter in the United States was in 1872, it was an instrument that merely measured the time the current was flowing through but not the current intensity or voltage. Thomas A. Edison developed a more accurate type around 1878 and 1881 and in 1888 Oliver B. Shallenberger, an American, invented what is known as the induction ampere hour meter, which became the forerunner of the meter that is used today.

The electrical energy we use in individual houses, stores, plants, etc., is paid for on the basis of kilowatt-hours (kilowatts multiplied by hours). The energy consumed is measured by the meter which is really a simple type of electric motor geared to a recording device. The motor is driven by the energy which it is to measure; it flows through the motor. Its speed is proportional to the power in watts flowing through it. The total revolutions made by the motor are added up and recorded on dials by a system of clockwork which moves needles over the dials. The ordinary type of meter has four such dials.

Each pointer moves over a circular scale having ten spaces. The pointer on the right moves over one space while one kilowatt-hour is being used. When this pointer makes one complete revolution ten kilowatt-hours have been used. The second pointer makes one revolution while the first makes ten revolutions so that each space of the second

dial indicates ten kilowatt hours, and one complete revolution of the second pointer indicates one hundred kilowatt-hours. Each space of the third dial indicates a hundred kilowatt-hours and each space on the fourth a thousand. To read the meter you simply note the number of complete spaces passed over by each pointer and write them down in order beginning at the left one. The result will be the complete number of kilowatt-hours which have passed through the meter on the way to the fixtures, machines and appliances that have been consuming the electrical energy.

This is the most common domestic meter. There are slightly different types for recording large quantities of power in factories and plants.

The Meter As A Protection

Protection for the individual citizen is the reason behind the emphasis on the accuracy of the meter. This accuracy is a guarantee to him that he can get an essential service at a rate that is fair and that cannot be falsified. John Citizen has a double guarantee as a matter of fact. Not only are the meters made to have a high degree of accuracy, but the government has passed laws to see that they are kept that way. Every five years the meters must be checked by government inspectors. In spite of war-time man shortages this law has not been relaxed. Each district in Ontario has a centre where all the meters of that locality must be sent in for their checking up. The protection acts two ways, of course. It protects the consumer from being overcharged and it also stops the occasional unscrupulous person from trying to tamper with their own meter. Each individual living unit, house, apartment, converted flat or summer cottage should have its own meter as a protective measure.

The black box in the basement, in short, is the sign to you that you are getting a square deal from one of the most essential of the public services.



EARLY MORNING at the Toronto Hydro-Electric System offices where a group of meter readers get their instructions for the day. In the picture at the right they are shown starting out on the job.

OLD RELICS PRIZED POSSESSIONS OF TWO COMMISSION EMPLOYEES



INTERESTING and historical links with the sixteenth, eighteenth and nineteenth centuries, in the form of a copy of Cicero, published in Latin in 1551, three old newspapers published in 1768, 1790 and 1846 respectively, and a copy of the Edinburgh Almanack issued in 1831, are in the possession of two Commission employees—R. C. Lane of the construction department, and J. H. Mackay of the promotion department.

These relics came to the attention of Hydro News quite by accident. When reading a Toronto newspaper recently, Mr. Lane saw an item headed: "Paper Founded By Dickens Celebrated 100th Birthday". Remembering that he had a copy of the first issue of that paper—then the Daily News and now the News Chronicle, one of Britain's leading newspapers—Mr. Lane asked the editor of Hydro News if he would like to see it.

Mr. Mackay was present at the time, and the conversation quickly turned to the subject of literary relics. The

result was that, the following day, Hydro News had the group of relics which are reproduced on this page. The newspapers belong to Mr. Lane and the copies of Cicero and the Edinburgh Almanack to Mr. Mackay.

Apparently, Mr. Lane came into possession of the newspapers in 1922 when his grandfather, the late Rev. P. H. Davis, who was then 80 years of age, and who was a congregational minister in Bristol, England, came to Canada for a three months' visit.

The late Mr. Davis, who was a keen collector of relics, brought the old newspapers with him and gave them to his grandson who is an enthusiastic philatelist.

As the illustration shows, these relics are well preserved. In the light of present-day conditions, many of the items and advertisements in the newspapers make both interesting and amusing reading.

For instance, in the Bristol Mercury of March 1, 1790, there is an advertisement for "coaches from the Buck Inn

(Continued on next page)

NOW THE FUEHRER'S GOOSE IS COOKED!



"WAS KOCHT?" was probably the Fuehrer's query as he goose-stepped hungrily about this modern electric kitchen in his lavish Berchtesgaden retreat. Allied Forces amply demonstrated "what's cookin'?" when they entered Herr Hitler's private vitamin sanctum during the mopping-up process of the European war during 1945.

(Photo courtesy Signal Corps, U.S. Army).

OLD RELICS

(Continued from previous page)

and Tavern, Bristol" which will carry four passengers, "in state," in the inside, at a rate of one pound, seven shillings each, and as many as can be hoisted on top for the modest sum of 14 shillings a head. The trip, incidentally, was to London and provided for overnight lodgings.

Then there was the malicious note in the column called "Articles of Intelligence" to the effect that an "un-mentioned" governor in America "must soon resign and return home, otherwise he will find, that though the latitude he is now in, is a very cold climate, it will soon grow too hot for him." This latter item appeared in the London Evening Post and is dated August 4, 1768.

The third paper, The Daily News, also published in London, carries a six column editorial on Free Trade as well as the feature article "Travelling Letters, Written On The Road—By Charles Dickens." Along with other works of Dickens, this article has been published in book form.

For the Latin scholars or book collectors, Mr. Mackay's copy of Cicero is a positive treasure. Printed only about seventy-five years after Caxton set up his first printing press in England, it was most likely set by hand and the appearance to the eye presents a picture of page after page of italics.

Mr. Mackay's other book shown here is the Edinburgh Almanack of 1831. It is a combined city directory, register and calendar of events, prices or any tid-bit of information necessary to the time.

In a chapter devoted to societies, such organizations like the Friendly Society of Dissenting Ministers, Society For The Sons of The Clergy, Society of The Charitable or Junior Female Society for the Relief of Indigent Old Women and many such listings that give a quaint insight into the life of that period.

Mr. Mackay recalls having bought these books some thirty years ago in Toronto. Although they have not been priced, it is understood that the "Cicero," especially, could never be replaced as there would be only a few in existence, and those in museums.

ENGINEER'S CONTRIBUTION TO VICTORY EMPHASIZED BY BRIGADIER CAMPBELL

**Permanent Structures Built By Canadians Commemorate Achievements
Of The Army Overseas — Addresses Annual Luncheon Of
Professional Engineers' Association Of Ontario**

ACCOMPLISHMENTS of Canadian engineers in the recent campaigns in Italy, Holland and Germany were highlighted by Brigadier Colin A. Campbell, D.S.O., O.B.E., at the annual luncheon of The Professional Engineers' Association of Ontario held at the Royal York Hotel, Toronto, on January 26. The story was a revealing one, and it was told by the soldier who directed all the active engineering operations of the 1st Canadian Corps from July, 1944, to the end of the war.

In August, 1944, there was a re-grouping of Allied troops in Italy. After crossing the Cesano river, the Canadians took over the coastal sector, and reinforced from time to time by a British division, a New Zealand division and a Greek brigade, accompanied the famous Eighth Army in its spectacular advance to the Senio river on the Po plain. In this advance, the experience of Canadian engineers in the use of road-making mechanical equipment and their realization of the importance of drainage to road preservation stood them in good stead. No less than 62 river crossings were made, and 310 bridges, spanning rivers and streams varying in width from 40 to 400 feet, were constructed by Canadian Corps engineers.

To get tanks across narrow rivers, the engineers devised an ingenious game of leap-frog. The turret was removed from a Churchill tank, and 15-foot ramps were

attached to each end. The tank would manoeuvre itself into a stream and drop the ramps. Then the other tanks designed for attack would drive across over the top of it. In case the streams were very deep, two or more tanks would be placed one on top of the other to serve as a bridge for the attacking squadron.

"In this way," said Brigadier Campbell, "we were able to surprise the enemy on several occasions. Coriana Ridge was captured in this manner after it had held out for more than two weeks."

In order to get infantry over dyked rivers with bad bottoms, a bridge known as the "Olafson" foot bridge was designed. This was made of half-inch pipe welded into a truss 15 feet long. Sections could be joined together to make up a 60-foot bridge.

Improved Piers

Another achievement of Canadian engineers on the Italian front was the improvisation of piers. As material was not available for the usual wooden or steel piling, the Canadians developed a method which cut delay to a minimum and used material which was in better supply.

"When the rivers were not in flood," explained Brigadier Campbell, "it was possible to work on the river bed,



THIS GROUP photograph taken on the occasion of the annual luncheon of the Association of Professional Engineers of the Province of Ontario shows, from left to right:—J. L. Lang, past-president; Dr. G. B. Langford, vice-president; E. V. Buchanan, general manager, London Public Utilities Commission; Brigadier Colin Campbell, D.S.O., O.B.E., the luncheon speaker; Dr. G. Ross Lord, president; and G. B. Tebo, The Hydro-Electric Power Commission of Ontario.

and we drilled in 2-inch pipe 15 to 20 feet in depth. This piping was placed in three rows of ten pipes each row, and then tied together by welding steel sections to them. Concrete was pumped into the piping, and a concrete cap 5 by 12 feet placed on the ends. These pipes were drilled in by an adaptation of the ordinary diamond drill, and a pier was completed in a matter of a few hours. In some cases when the rivers were in flood, the pier caused scour to develop, and sometimes, after the flood subsided, portions of the piping were left unsupported. To remedy this, 4-inch pipes were drilled outside the concrete portion of the pier, R.S.J.'s welded to these, and the load distributed between the pier and the new support portion. This method was used on all the piers on the main routes in Italy from Cassino and Ortona north, and no failures developed."

Bridges Swept Away

During the Eighth Army advance, floods often played havoc with bridges. The Savio river rose 30 feet in 12 hours just as the Canadian troops were preparing to cross it. Bridges were swept away, and it was impossible to use boats or rafts in the rapid waters. So swift was the torrent that a haystack riding down on the flood hit one of the bridges with such force that it moved one end of the structure off its base plate. It was in the battle here to establish another bridgehead that Pte. "Smokey" Smith of the Seaforth Highlanders of Vancouver won the V.C.

Defence Of Nijmegen Bridge

When the 1st Canadian Corps was transferred to Holland towards the end of the winter of 1945, its engineers were faced with new problems which called for no less skill and ingenuity than they had shown in Italy.

"We had experienced no river crossing in Italy where the river was navigable," said Brigadier Campbell. "And now we had come to the flooded area of one of Europe's greatest rivers, the Rhine."

The British army had captured intact the bridge at Nijmegen, and this was the only crossing held by the Allies during the winter season. The Germans tried persistently to destroy or damage it by sending floating mines down the river guided by expert swimmers in special rubber suits. On one occasion the Brigadier said, the enemy was successful in placing a mine beside one of the main piers. Curiously, 100 feet of roadway was blown out of the bridge, but no damage was sustained by the piers. By the erection of two Bailey bridges the structure was again of use within a few short hours.

Water Levels Changed Rapidly

"The defence of this bridge," Brigadier Campbell pointed out, "was a most interesting one from an engineering standpoint. Water levels on the Rhine change rapidly and have a variation of about 25 feet. In the flood period they are very high. At times it was very difficult to hold the protecting booms in place, especially with the movement of ice. However, the bridge was successfully defended and contributed greatly to the success of the Canadian Army thrust into Holland."

One of the most notable feats of the Canadian engineers was the construction of permanent bridges at Zutphen and Arnhem. Brigadier Campbell gave figures on the

"DOG-ON-IT!"



IT WAS probably the "woof-woof" on the cover of this copy of Hydro News that first attracted the attention of eleven-months-old Brian Wastle, grandson of L. R. McKim, district inspector of The Hydro-Electric Power Commission of Ontario at Hamilton. Brian, it is claimed, became quite dogmatic when his parents Mr. and Mrs. Cecil Wastle interrupted him before he was able to completely digest one of the "Harnessing Horsepower" series!

material requirements for these. Into their building went 6,775 tons of Bailey bridge, 3,500 piles from 25 to 70 feet in length, 750 tons of coal, 500 tons of cement, 5,000 cubic yards of rubble, 3,500 cubic yards of concrete aggregate, and 3,500 yards of sand-fill. The speaker added that the bridges at Zutphen have been named after General Crerar, commander of the First Canadian Army, while the two at Arnhem bear the names of Generals Foulkes and Simmonds, commanders respectively of the 1st and 2nd Canadian Corps. These bridges, the speaker pointed out, would be the only ones used in their localities for some years to come and would serve to honour the achievements of the Canadian Army.

At the annual business meeting, G. B. Tebo of the Commission staff was elected to the council's electrical branch.

O.M.E.A. AND A.M.E.U. ANNOUNCE PROGRAMMES

**Joint Convention In Toronto On March 5 And 6
With Registration On Evening Of 4th**

Lighting in all its phases, and problems of distribution, are among the important subjects which will be discussed at the joint convention of the Ontario Municipal Electric Association and the Association of Municipal Electrical Utilities scheduled for March 5 and 6 at the Royal York and King Edward hotels in Toronto. The convention is an annual affair, but owing to transportation difficulties and lack of hotel accommodation, it was cancelled last year, so that the forthcoming meeting will have an additional significance. Business meetings of the two associations will be held separately. The programmes follow:

O.M.E.A. PROGRAMME

Monday, March 4

Registration in roof garden, Royal York Hotel. At 6.30 p.m. the 1945 executive committee will hold a dinner followed by an executive meeting.

Tuesday, March 5

9.00 a.m.—Registration (continued) in the rotunda, convention floor, Royal York Hotel. 10 a.m.—Meeting in ballroom, Royal York Hotel. Agenda—president's address, naming and reports of committees, reading of resolutions.

12.30 p.m.—Joint luncheon at the King Edward Hotel with A.M.E.U. Greeting by Mayor Saunders. Address on "Side Lights on Ontario" by Professor Fred Landon of the University of Western Ontario. 2.00 p.m.—Joint meeting with A.M.E.U. in banquet hall, Royal York Hotel. Address by Dr. Thomas H. Hogg, chairman of The Hydro-Electric Power Commission of Ontario. Discussion period.

6.45 p.m.—Joint banquet with A.M.E.U. in the concert hall, Royal York Hotel. The guest speaker will be Percy Philip, newspaper correspondent, of New York and Ottawa.

Wednesday, March 6

9.30 a.m.—Meeting in ballroom, Royal York Hotel. Agenda—Reports of committees on credentials and resolutions. Election of officers. Report of election of district directors. Unfinished and new business.

12.30 p.m.—Luncheon at King Edward Hotel. 2.00 p.m.—Meeting in ballroom, Royal York Hotel. Agenda—district reports, discussion and unfinished business. The O.M.E.A. executive committee will meet immediately following the close of the afternoon session.

A.M.E.U. PROGRAMME

Monday, March 4

9.00 to 12.00 p.m.—Registration in the roof garden, Royal York Hotel.

QUARTER CENTURY CLUB TO ADD 79 NEW MEMBERS

Another seventy-nine names will be added during 1946 to the membership roll of the Ontario Hydro Quarter Century Club, which will bring the total to over 800.

The following list was made available to Hydro News by S. L. Eisenhower, secretary of the club:

LADIES

NAME	DEPARTMENT	LOCATION
GRAYDON, Marjory Helen	Printing	Toronto
GREGG, Mac, Mrs.	Municipal	Twp. East York
HAUGHEY, Catherine Agnes	Municipal	Toronto
MAHONEY, Agnes	Accounting	Toronto
McKANE, Annie	Printing	Toronto
SCHRODER, Maud Henrietta	Elec. Eng.	Toronto
WHISTLER, Emily	Operating	Niagara Falls
WILSON, Jean	Executive	Toronto

MEN

NAME	DEPARTMENT	LOCATION
ARMSTRONG, Elmer Wayne	Operating	Stamford Centre
BAILEY, Forrest Patrick	Operating	London
BARBER, Anson Harold	Elec. Eng.	Toronto
BATT, Elmer Frederick	Operating	Niagara Falls
BLACK, John	Operating	Niagara Falls
BOYD, David	Operating	Niagara Falls
BROWN, William Dunbar	Res. & Test.	Niagara Falls
BUMSTEAD, Stanley Walter	Elec. Eng.	Toronto
CAIRNS, Kenneth Stuart	Operating	Campbellford
COE, Richard Edward	Operating	Niagara Falls
COTE, PAUL	Operating	Niagara Falls
CRONMILLER, Michael Henry	Operating	Niagara Falls
CROWHURST, Frederick Henry	Printing	Toronto
DILCOCK, Leonard	Elec. Eng.	Toronto
ELLIS, Dugal Norman	Operating	Etobicoke P.O.
ERWIN, John Thomas	Elec. Eng.	Toronto
EVOY, Ernest Lloyd	Operating	Stratford
EWART, David Irvine, Jr.	Operating	Niagara Falls
EYLES, James John	Operating	Markdale
FERGUSON, Charles Russell	Elec. Eng.	Brampton
FILIPPONE, Dominico	Operating	Niagara Falls
GIBBON, Thomas H.	Operating	Toronto

(Continued on page 26)

Tuesday, March 5

9.00 a.m.—Registration (continued) on the convention floor, Royal York Hotel. 10.00 a.m.—president's address, reports of committees, election of officers, at Royal York Hotel.

12.30 p.m. See O.M.E.A. programme. 2.00 p.m.—See O.M.E.A. programme. 4.00 p.m.—executive committee meeting, Royal York Hotel.

6.45 p.m.—See O.M.E.A. programme.

Wednesday, March 6

9.30 a.m.—Meeting in banquet hall, Royal York Hotel. D. W. Atwater of the Westinghouse Company of Bloomfield, New Jersey, will read a paper on "Lighting." This will be followed by discussion.

12.30 p.m.—Joint luncheon with the Electric Club of Toronto, in the concert hall of the Royal York Hotel. Dan McCowan will be the guest speaker. 2.00 p.m.—Carl Schwanger of the Toronto Hydro-Electric System will read a paper on "Problems of Distribution." This will be followed by discussion.

NORTH OF FIFTIETH PARALLEL

(Continued from page 8)

the assistance of Ethel Dobson and Jeanette Douglas, two charming and very competent nurses. As was the case in all other mining communities, Hydro News received a warm welcome at Central Patricia. R. E. Barrett, the manager, re-echoed sentiments expressed by all the other mine managers when he paid tribute to the important work which Hydro is doing in the North Country.

While in the Pickle Crow and Central Patricia area Hydro News spent a little time chatting with Albert (Bert) Wager, patrolman and chief operator, and his wife. Four little Wagers, Joan, aged 10; Eddie, 9; Ann, 6, and Victor, aged 2, were also on hand to exchange greetings. Then there was Jim Cullen, assistant patrolman at Crow River, a Scot who hasn't lost his accent and who was a noted soccer player in his early days. Jim has two kiddies, Lee, 8, and Eleanor, 3. Another Hydro man at Crow River is Albert Williams, a patrolman in training.

By reason of their environment these people seem to have acquired the "know how" along many lines. Little gadgets round their homes and the produce from their gardens bear testimony to their skill. In their daily work, they are playing their part in maintaining a vital service twenty-four hours a day and three hundred and sixty-five days a year.

In the fourth and concluding article in this "North Of The Fiftieth Parallel" series, Hydro News will chronicle impressions formed while visiting Rat Rapids generating station and patrolmen's cottages along the 150 miles of Uchi line. Forest fires, fire rangers and fish, which are almost as big as men, (with photographic evidence!) will also be discussed.



GOOD FELLOWSHIP and good food are outstanding characteristics of the various gold mining communities visited by Hydro News. The above illustration shows a typical scene in the vicinity of a Northern Ontario mine.

TAXATION BRIEF

(Continued from page 10)

and a province-wide distributing system, we have the pole position, we cannot afford to relax our efforts to deliver electric energy at the lowest possible cost especially in the face of anticipated post-war industrial expansion.

Effect Of Future Large Water Power Developments

Approximately one-half of the large water power resources of this Province are yet to be developed. These developments will require the expenditure by The Hydro-Electric Power Commission of Ontario of large sums of money. At the outset it will mean carrying a high overhead by reason of the large capital expenditure, until the large block of power can be absorbed by consumers and expanding industry. There is a real and obvious danger that additional taxation will have a decided effect on the cost of power in such a situation, and seriously affect the trend of low-cost power so essential for attracting and establishing new industries, with the consequent great increase in the opportunity for employment of the people of this Province.

Additional Taxes Would Raise Rates

In our submission we maintain that the water power resources of this Province have been and are being used for the benefit of all the people. The plan from the beginning was to distribute hydro-electric power at cost, and by reason of the original plan and organization the cost has been decreasing steadily over the years and shows every indication of continuing to do so. This fact has been perhaps the greatest single contribution to raising the standard of living of the people of this Province.

It is true that in this process a large capital investment of nearly half a billion dollars has been built up and substantial reserves have been accumulated, but these reserves are not beyond what experience over 37 years has taught us to be necessary for the protection of the invested capital.

We contend that in Ontario we have not yet reached the point in our Hydro development and extension where we can afford to either raise the cost of power or retard the lowering of rates by the imposition of additional taxation. This Province has built up the enviable record of the highest per capita kilowatt-hour consumption of any like area in the world. The saturation point is, however, far from being reached. Lower electric rates mean more use of electric appliances and more uses for electric energy. They mean extension of electric services to many areas, more employment and industrial expansion.

Large Post-War Expenditures Planned

The Ontario Municipal Electric Association considers that at present, and perhaps for many years to come, it would be most unwise to increase the present taxation of Hydro, which now stands at more than \$3,500,000 per annum. Particularly is this true with the uncertainties of post-war power demands, when tremendous capital investment in Hydro properties will have to be carried with reduced revenues, also when very large expenditures for deferred maintenance and new additions have to be made, totalling \$6,000,000 per year by the local utilities, and \$12,000,000 per year by the Provincial Commission.

PROPOSED FREQUENCY CHANGE

(Continued from page 14)

only be effected in a systematic and orderly manner over a period of several years.

It is also evident that the district where the change is contemplated now gets its power from generating plants whose full production is required continuously. In order to effect the change without any interference to present power loads, it would, therefore, be necessary to undertake a major new power development to fill in the gap in service while each of the generating stations was being converted in turn. In this connection, the Des Joachims development on the Ottawa river has recently received much attention in the Press. The primary object of this development is to provide an additional source of power to meet the ever-increasing demands for electricity throughout the southern sections of the province. It is estimated that it would ultimately add 400,000 horsepower to the Commission's loads. Whether 25 or 60-cycle generators are chosen depends on the result of the consideration of the problem of converting the Niagara Division from 25 to 60-cycle operation.

Much Useful Information

Investigations being made into the feasibility of making the change are being based on available statistical information and upon actual experiences of the Commission and other electrical utilities. The change-over made by the Commission from 66⅔-cycle to 25-cycle in the Hamilton district has supplied much useful information; while, through the courtesy of the Niagara Hudson Power Corporation, which some years ago made a change-over from 25-cycle to 60-cycle frequency in the Niagara Falls-Buffalo area, much valuable data was placed at the disposal of the Commission.

There is no doubt from the information supplied to Hydro-News that, if the decision to make the change is made, every endeavour will be made to carry it out in a smooth and efficient manner, and the support of the municipalities and the public will be essential to its success. As far as the consumers are concerned, the interruption to their enjoyment of electrical services would be practically nil. The change could be carried out district by district according to plan, and even where certain appliances in domestic use have to be altered, there would be minimum interruption to essential services. Wiring systems would not be affected in any way. Apart from the fluorescent type, there would be no change required in lighting fixtures. Heaters, most electric stoves and water heaters would require no conversion.

If it is decided to make the change, should consumers requiring new equipment now immediately turn to appliances designed for 60-cycle power?

Selecting Right Equipment

The answer to this is that consumers should rely upon the advice which they would undoubtedly receive from their municipal Hydro, or, in the case of rural consumers, from the Commission direct. New 25-cycle equipment, when necessary, would continue to be purchased until the time came for the consumer's area to be served with 60-cycle

GEORGE I. GRAFF PASSES

After a short illness, **GEORGE I. GRAFF**, Hydro commissioner of Stratford Public Utilities since 1936, died at his home on January 18.

Born at Port Elgin in 1883, Mr. Graff received his education at schools in that vicinity, and moved to Stratford in 1906, when he entered the real estate business.

His first venture into municipal politics came in 1927 when he was elected to the city council. Since that time, he has served in various offices including that of chief magistrate.

Apart from his busy business and civic life, Mr. Graff found time to take an active interest in various social service and church organizations and was a prominent figure in the Victory Loan Campaigns.

Surviving are his widow, the former Melvina Schinvein, one son, Willard, a daughter, Margaret, and three brothers.



power, which, in many cases, might be a matter of some years. Most modern radios are built to be used on either frequency, and consumers could make sure that they were getting such an instrument when purchasing. Many domestic and farm appliances are equipped with universal motors which operate on both 25-cycle and 60-cycle frequencies, such as is the case in most cream separators and vacuum cleaners, and care should be taken here, too, in selecting the right equipment for future needs.

With regard to those appliances adapted only to one frequency, the cost of conversion would not be very high, especially when it is considered that they might be in use for some time on the old frequency before the change could be made. For instance, it was estimated that the cost of converting washing machines would run between \$15.00 and \$20.00. For ironers, the cost might be about \$20.00. Refrigerators would cost from \$25.00 to \$100.00 according to type and age. With radios which require revision the cost would average \$5.00. Furnace blowers could be re-adapted at around \$10.00, while pumps would run up to about \$35.00.

Matter For Detailed Study

It was explained that these figures with regard to costs could only be approximate as they are based on 1945 prices, which are subject to change. The whole question of cost, it was pointed out, and the share that would have to be borne by the Commission, the municipalities and the consumers would be a matter for detailed consideration if and when it is decided to carry out the change. There is little doubt that the benefits to be derived from 60-cycle power would, in the end, more than compensate for any outlay that had to be made. Co-operation of Hydro as a whole and the Electrical Industry, it was intimated, would iron out the difficulties and make the job proceed with the minimum of trouble for everybody.

PASSPORT AND IDENTITY PIN RETURNED BY GENERAL CRERAR

TWO historic symbols of General H. D. G. Crerar's association with The Hydro-Electric Power Commission of Ontario, in the form of his passport dated March, 1913, and his identity pin, are reproduced on the next page.

The former Commander-in-Chief of the Canadian Army Overseas, who was at one time head of the Commission's laboratory prior to the First World War, returned these articles with a covering letter to Dr. Thomas H. Hogg, chairman of the Commission.

"In sorting out some old papers and things", he wrote, "I came across the 'identity' pin, which was mine when I was assistant engineer in the 'Hydro'—before the First Great War—and also a passport issued to me, when, in 1913 I travelled Europe for the Commission.

"I do not suggest that they are of any particular significance, yet as the 'Hydro' paid for them originally, I pass them back to you for disposal. (Signed) H. D. G. Crerar."

Several Commission employees remember the General for the part he played in helping design and organize the laboratories which were still under construction, when he joined the Hydro in 1912. Prior to that time, he had been superintendent of the Canadian Tungsten Lamp Company at Hamilton.

When the First World War broke out in 1914, he enlisted in the Field Artillery, and went overseas with the first contingent. His brilliance in the field was soon recognized and by the end of the war he had attained the rank of Lieutenant-Colonel.

General Crerar returned to Hydro in 1919 as production and service engineer but a year later he received the appointment of General Staff Officer at Ottawa.

When Canada declared war on Germany in 1939, General Crerar was commandant of the Royal Military College. He went overseas with the rank of Brigadier and was later appointed in successive steps to general, and that rank carried with it the responsibility of Commander-in-Chief of the Canadian Army overseas. In the near future, it is reported, General Crerar will retire from military service.

General
H. D. G.
Crerar



(Photograph by Karsh)

(Continued from page 23)

GODIN, Harry	Municipal	Norwood	Operating	Niagara Falls	McVEIGH, John	Operating	Niagara Falls
GRAY, Herbert	Operating	Toronto	Operating	Queenston	NOWERS, Arthur Henry Crawford	Operating	Stamford Centre
GREVES, William John	Elec. Eng.	Twp. E. York	Operating	Niagara Falls	PARNELL, Evan Joseph	Operating	Paris
HAMILTON, Robert Emmet	Elec. Eng.	Toronto	Operating	Niagara Falls	PEEL, Robert	Operating	Niagara Falls
HARKINS, John Murphy	Elec. Eng.	Toronto	Operating	Niagara Falls	PRICE, James	Operating	Toronto
HENDERSON, George	Elec. Eng.	Toronto	Operating	Niagara Falls	RESSLER, Frank Vernon	Operating	Niagara Falls
HICKS, Ernest Edward	Elec. Eng.	Toronto	Operating	Niagara Falls	RIDDELL, James Barr	Operating	Chippawa
HIGGINS, Edgar Clarence	Elec. Eng.	Niagara Falls	Operating	Dundas	SAWYER, William John	Operating	Niagara Falls
HORNE, Harry William	Operating	Niagara Falls	Operating	Niagara Falls	SCOTT, Harold Abraham	Operating	Toronto
JACKSON, James Earl	Operating	Belleville	Operating	Niagara Falls	SHISLER, Perry Newton	Operating	Toronto
KIMMER, William Thomas	Operating	Niagara Falls	Operating	Niagara Falls	SHULVER, Eric	Elec. Eng.	Toronto
MANBY, Aaron Woodrooffe	Executive	Toronto	Operating	Niagara Falls	STRUTT, Clyde Alfred	Operating	Niagara Falls
MATON, Herbert Edward	Bldg. Adm.	Toronto	Operating	Niagara Falls	STUCKEY, Charles Samuel	Operating	Niagara Falls
MATTHEWS, Ralph Godard	Elec. Eng.	Toronto	Operating	Niagara Falls	TENNANT, William Roy	Operating	Niagara Falls
MEANLEY, William James	Operating	Chippawa	Operating	Niagara Falls	TYNDALL, Robert Robertson	Operating	Niagara Falls
MOLLISON, Thomas Myles	Operating	Toronto	Operating	Niagara Falls	VERNON, Ernest	Operating	Sudbury
MACDONALD, John Murdoch	Operating	Fitzroy Harbour	Operating	Niagara Falls	VICK, Charles Julian	Exec. & Sec.	Toronto
McCUAIG, Donald John	Operating	Niagara Falls	Operating	Niagara Falls	VOADEN, Clifton James Vincent	Elec. Eng.	Toronto
McHARDY, Chas. Gordon Robertson	Elec. Eng.	Toronto	Operating	Niagara Falls	WADDINGHAM, Harold A.	Elec. Eng.	Leaside
McKAY, Nelson Keith	Operating	Toronto	Operating	Niagara Falls	WAGNER, Herbert Louis	Elec. Eng.	Scarboro P.O.
McRAE, Russell Fern	Operating	Toronto	Operating	Niagara Falls	WAGNER, Harold Wilfrid	Elec. Eng.	Toronto
			Operating	Chatham	WALLACE, Andrew	Elec. Eng.	Toronto
					WARNER, Charley Amos	Operating	Queenston
					WATKINS, Joseph William	Accounting	Toronto
					WEDGE, Harvey Isiah	Operating	Niagara Falls
					WHITE, Roland Albert Henry	Operating	Peterboro
					WILLOUGHBY, Howard M.	Operating	Niagara Falls
					WISMER, Russell Alonzo	Operating	Chatham

THIS PASSPORT IS NOT
IN ANY CIRCUMSTANCES
VALID BEYOND FIVE YEARS
FROM THE DATE OF ITS
ISSUE. A FRESH
PASSPORT MUST THEN
BE OBTAINED



PASSPORT, CANADA.

By His Royal Highness the Governor General of Canada.

J. Arthur William Patrick Mordaunt
Field Marshal, Duke of Cornwall and of Strathearn, Earl of
Sussex, in the peerage of the United Kingdom, Prince of the
United Kingdom of Great Britain and Ireland, Duke of Saxe-Weimar,
Prince of Saxe-Coburg and Gotha, K.G., K.C., K.P., P.C.,
G.C.B., G.C.H., G.C.E., G.C.V.O., G.C.U.C., Personal Aide
de-Camp to His Majesty The King, Governor General and
Commander-in-Chief, the Dominion of Canada.

*Request, in the name of His Britannic Majesty, all
those whom it may concern to allow Henry Duncan Graham
Crevar, Esquire, of the City of Toronto, in
the Province of Ontario, in the Dominion
of Canada, Assistant Engineer of the Hydro-
Electric Power Commission of Ontario,*

*British Subject travelling in foreign parts to Pass Freely, and to afford
him every assistance and protection of which he may stand
in need.*

Given under my hand and seal-at-arms, at Ottawa,
this twenty-second day of *March* 1913

BY COMMAND

A. H. Hall
Acting UNDER-SECRETARY OF STATE FOR EXTERNAL AFFAIRS.

SIGNATURE OF BEARER

Henry Duncan Graham Crevar

Lighter Lines



"All right—break it up!"

Opposition on the part of property owners to the suggestion that the United Nations Organization take over a famous millionaires' playground in Connecticut for a headquarters or "capital" will undoubtedly be regarded as a hopeful sign by many who have the permanent peace of the world at heart. Judging by the furore reported to have been raised, it would seem that the UNO, wherever it camps, is looked upon as likely to stay.



"Gold, nothing! I'm lookin' for my teeth!"

Hydro Valentines

(To An Expectant Public)
This cycle change!—We've had to wrap
Our head in a bandanna.
You ask us if it's on the map,
Our answer is "manana."

(To The Farmers Of Ontario)
You farmers toil from dawn to dark,
You've little time for leisure.
Let Hydro, then, supply the spark
To make your work a pleasure.

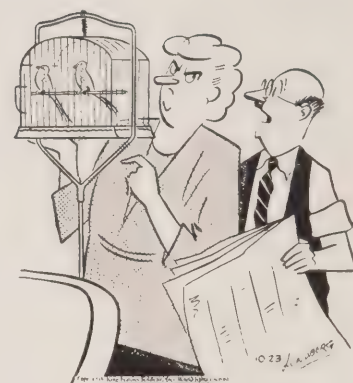
(To Industries Seeking New Locations)
You can go to Timbuktu if you care
If you do, you won't find Hydro there.
So why fan out on camel power in desert-ringed oases
When low-cost electricity will put you on the bases?

DOWNWORDS PUZZLE

LAST MONTH'S SOLUTION

1	2	3	4	5	6	7	8	9	10	11
D	E	S	J	O	A	C	H	I	M	S
E	S	E	O	P	L	H	A	C	D	I
W	C	N	H	E	Q	A	R	E	C	X
A	A	N	N	O	M	N	B	C	N	
T	R	T	R	S	N	P	E	O	C	A
E	P	O	B	E	Q	L	S	A	X	T
R	M	R	O	S	U	A	S	T	X	I
I	E	I	O	A	I	I	X	O		
N	N	A	T	M	N	N	N	N	I	N
G	T	L	H	E	S	S	G	G	I	S

More frequent strapping has been suggested as a deterrent to juvenile delinquency. In view of the scarcity of leather, parents will probably have to pare the rod to foil the child.



"Maybe he's just sick and tired of her!"

The master came into the class with the examination papers he had just marked. Looking over his spectacles he called a boy up to the desk.

"You did very well in your mathematics, Brown—much better than I expected—but why did you put quotation marks around so many of your answers?"

The boy hesitated—then blurted out: "It was a matter of conscience, sir." "Conscience?"

"Y-es, sir. I was looking over the shoulder of Philip Smith. And I . . . I felt I had to give him some credit!"



"I'm afraid it's the hunting season again, Mr. Grimes!"

#his and #hat

BY THE EDITOR

ONE OF the first signs of Spring was noted at the beginning of the month despite discouraging reports from groundhog headquarters. An enthusiastic Hydro gardener was seen studying a seed catalogue during his lunch hour. This column hopes it's a happy augury for the present year and for the years yet to come.

* * *

SPEAKING ABOUT gardening, Hydro horticulturalists, individually and collectively, had a fine record of achievement to their credit during the war years. For instance, take a quick flash-back to 1943 when 745 Hydro victory gardeners were in action throughout the province. In the Fall of that year, there were 268 entries divided into 80 classes at the annual show. But here's the important fact, in 1943 Hydro victory gardens yielded a harvest of some 75 tons of produce valued at \$21,000.

* * *

THERE WAS fine leadership and long hours of hard work back of that effort. The members of the committee who sparked that down-to-earth drive were Adam Smith, A. H. Sharpe, W. H. Carr, A. B. Hayman, H. R. Hill, W. R. Harmer, J. J. Traill, J. F. MacLaren, R. H. Starr, John MacLellan, Edithemma Muir, Dorothy Newham and many others whose names are not recorded on committees.

* * *

FROM THAT committee emanated invaluable information on the "know how" of gardening — information which was made available to all members of the horticultural section of the Ontario Hydro-Electric Club through-

out the province. Following instructions, Hydro folk picked up spades and rakes and went into action with a will to help Canada's war effort; and now there's a job to do helping the peace effort and getting busy with what might be called "Permanent Peace Gardens." There's still a great need for food which can be produced in gardens and back lots and the experience and knowledge gained during the war years should not be permitted to go to seed. That knowledge and experience, and the need which exists, should be an incentive to invest in more seed and carry on the good work. This piece is intended as a friendly pre-Spring "dig."

* * *

THIS MONTH we have an unsigned communication—the omission of the name is obviously an oversight—from Central Patricia, Ontario. We believe the writer is Bert Wager at Crow River and we appreciate his comments on the "North Of The Fiftieth Parallel" series. He goes on to say: "I have been up in this country for the past nine years and it is the first time I have seen the thermometer go down to 60 degrees below zero; that was this morning, January 29." Must be quite chilly up there these days.

* * *

FROM TIME to time, we meet people who depart from recognized procedure in daily habits. Just recently, for instance, we were sitting beside a Commission engineer having a cafeteria lunch when we noted that he tackled his meat course before having his soup. Needless to say, we were curious and, finally, when we managed to get up enough courage to

question him we were advised that there is a sound, logical reason for this procedure. The meat course, he pointed out, is on an open plate and gets cold more quickly than the soup which is in a deeper dish and which, therefore, retains its heat longer. "I like my food good and hot," he confided. Think we'll give this idea a workout some noon hour.

* * *

WE ACKNOWLEDGE with thanks the contribution submitted by G. M. B. Lumgair of the accounting department and we are making use of a few of his verses on "High Tension Lines." Here they are:

*Stringing the singing copper, raising the steel on high;
Straddling the lofty girders, watching the clouds go by.*

*Taming the turgid torrent, tuning the water's speed,
Turning the Wheels of Commerce—serving a Nation's need.*

*Soothing that frightened fury, bridling that frenzied force,
Cradling the foaming current; ten times ten thousand horse!*

*City, and town, and village, hamlet and rural lane,
Life to the humblest cottage, light to the vaulted fane!*

*These be a Nation's builders, this ever a work worth while,
Stretching the humming ribbons, mile upon throbbing mile!*

* * *

THIS IS a happy month for those who observe the custom of exchanging valentines. We thought about trying to pen a few lines of poetry but we were completely discouraged when a member of the staff said: "Have a heart!"



Hydro HOME FORUM by Edithemmu Muir HOME ECONOMIST

A FOOD clinic plays a major role in baking. The diagnosis of a cooking failure is not necessarily intended to determine the cause of a digestive disturbance. For instance, tests are made on cookies when they don't look good, taste good, or feel good. Baking that is a failure is a waste of materials and time. Small cookies may have poor flavour or poor texture; a check on the proportions of the ingredients and the methods will solve the problem.

In offering cures for cookie ills we also suggest possible causes:

Do Cookies Spread In The Pan?

This type usually contains very little moisture and if too much sugar is used, the sugar melts and as syrup causes the cookies to spread. (A good reason for making not-too-sweet cookies.) If you use too much baking powder or soda or if the pan is greased too much, this may be the source of trouble.

Be sure the exact amount of sugar is used. Measure baking powder and soda carefully. Grease the pan lightly.

Do Cookies Stick To The Pan?

Diagnosis:

1. Pan not sufficiently greased.
 2. Pan not properly cleaned after previous baking.
 3. Too high a proportion of caramelizing ingredients—milk or sugar or both.
 4. Too much heat in the bottom of oven, or cookies baked too close to the bottom element.
- Cure:

(a) Only cookies containing a large amount of shortening (such as short-breads) can be baked on an ungreased bake sheet.

(b) Always scour pan thoroughly after each baking to be sure surface is smooth and clean for next baking.

(c) Measure ingredients for cooking carefully, being sure the proper amounts of sugar and milk are used.

(d) If cookies appear to be browning too quickly on the bottom, place the cookie sheet on a higher rack in the oven.

Are Cookies Too Thick?

Diagnosis:

1. Too much flour.
2. Not rolled thin enough.
3. Too much baking powder or soda.

Cure:

(a) Make the dough stiff enough to roll thin. Chilling the dough before rolling helps. Be sure not to take up extra flour in rolling. Extra flour is less likely to be picked up if slip-covers are used on rolling pin and board.

(b) If crisp cookies are desired, roll dough paper-thin. For soft cookies roll about one-quarter inch thick.

(c) Use reliable recipe and measure carefully.

Are Cookies Too Hard?

Diagnosis:

1. Too much flour.
2. Overbaking.

Cure:

(a) Use correct proportions of flour and other ingredients. Do not add extra flour when rolling out the dough. Chill dough to reduce the necessity of adding extra flour.

(b) Watch baking time. Test cookies when minimum baking time has been reached.

HOMEMAKING HINTS

Chopped meat spoils quickly and should be put in the coldest part of the refrigerator. Better still, chop just before using. Another meaty tip: never cool boiled ham or any other meat in the broth. Remove as soon as it is cooked; cool and store meat and broth separately in the electric refrigerator.

Vegetables in a flat-bottomed pan are placed on the large electric element and a tight-fitting lid is placed on immediately. Turn to low or medium when steam gushes out—no need to peek in as that wastes heat and vitamins. Time the cooking.

Heat canned soups to simmering—never boil.

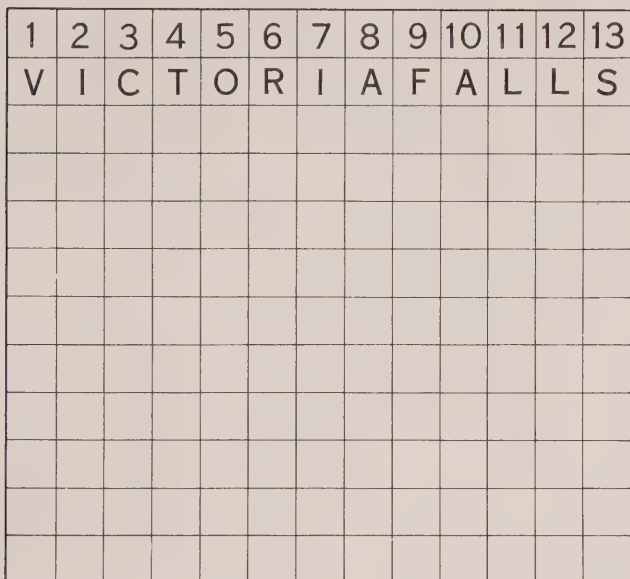
Start cooking frozen foods while still frozen—don't thaw first.

Do you feel that your radiators aren't giving enough heat? Then clear for action! Whisk off those radiator aprons. They're gremlins as far as heat is concerned. At the same time be sure to move the furniture from in front of radiators and hot air registers. The heat won't be able to circulate properly if they are blocked by a chair or chesterfield.

Corduroy may be washed—if handled properly. Launder separately as colours are apt to run and hang up the garment, sopping wet, to dry. Wringing or rolling is apt to rough up the pile. Velvets not really soiled but looking a bit down-trodden respond well to a thorough brushing with a strong whisk and steaming, hung up in a steam-filled bathroom.

* * *

To remove mud and sand from a youngster's snowsuit, let dry and clean with a vacuum cleaner.



“WELL, well,” muttered Professor Perplexus, who appeared to be singularly agitated after the perusal of his fan mail, “so you think my downword puzzles are too easy, do you? Well, they tell us the world is getting smaller and smaller all the time, so we’ll just see how much *THAT* means to you. This time we’re going to make a little excursion abroad. Over in British Africa there is a giant waterfall called Victoria Falls. Some day it will be supplying power for agriculture and industry. So,” he concluded, smoothing his whiskers, “it might be a good thing to acquaint yourselves with its environment. Let’s push off.”

DEFINITIONS

1. Standing at the brink of Victoria Falls, many people would experience this feeling.
2. A river horse within the sound of Bow Bells.
3. Famous Empire builder after whom Rhodesia was named.
4. Carriers of sleeping sickness.
5. One of these provides a substantial breakfast for a native chieftain and his family.
6. A species of giraffe.
7. With government restrictions on elephant shooting, this fellow is behind the eight (billiard) ball now. (Two words).
8. Ancient mine workings near Victoria Falls are of particular interest to this savant.
9. Lion-hued.
10. Native tribes which formerly practised the arts of war now follow this peaceful pursuit.
11. Stanley found him, but he found Victoria Falls.
12. A tributary of the Zambezi, about 75 miles above Victoria Falls.
13. The only colourless thing about this intrepid hunter and explorer was his second name, which we leave out. He discovered the Victoria Nyanza, one of the sources of the Nile.

SOUTHERN ONTARIO SYSTEM

EMBRACING NIAGARA, GEORGIAN BAY AND EASTERN ONTARIO
DIVISIONS

HORSEPOWER

PRIMARY LOAD

1945
1944
1939

2,500,000

2.000.000

1.500.000

1.000.000

500,000

JAN. FEB. MAR. APR. MAY JUNE JULY AUG. SEPT. OCT. NOV. DEC.

PRIMARY LOADS

AREA SERVED BY	MAXIMUM 20-MINUTE PEAK H.P.		PER CENT INCREASE
	DECEMBER, 1945	DECEMBER, 1944	
SOUTHERN ONTARIO SYSTEM	2,079.382	2,044.416	+ 1.7
THUNDER BAY SYSTEM	127.078	119.303	+ 6.5
NORTHERN ONTARIO PROPERTIES	204.345	220.936	- 7.5
TOTAL	2,410.805	2,384.655	+ 1.1

PRIMARY AND SECONDARY LOADS

SOUTHERN ONTARIO SYSTEM	2,185.012	2,084.275	+ 4.8
THUNDER BAY SYSTEM	140.483	135.523	+ 3.7
NORTHERN ONTARIO PROPERTIES	<u>291.517</u>	<u>273.611</u>	+ 6.5
TOTAL	2,617.012	2,493.409	+ 5.0

MUNICIPAL LOADS, NOVEMBER, 1945

SOUTHERN ONTARIO SYSTEM NIAGARA DIVISION (25-Cycle)

	H.P.	Domes- tic Con- sumers		H.P.	Domes- tic Con- sumers		H.P.	Domes- tic Con- sumers
Acton	1,918	544	Erie Beach	14	79	Palmerston	698	400
Agincourt	308	168	Essex	669	528	Paris	2,055	1,215
Ailsa Craig	174	147	Etobicoke	11,988	6,157	Parkhill	323	315
Alvinston	172	205	Exeter	971	544	Petrolia	1,191	825
Amherstburg	1,259	734	Fergus	1,609	770	Plattsville	162	118
Ancaster Twp.	602	394	Fonthill	269	300	Point Edward	1,160	349
Arkona	76	117	Forest	746	510	Port Colborne	2,698	1,655
Aurora	1,674	793	Forest Hill	9,760	3,537	Port Credit	1,360	649
Aylmer	1,220	758	Galt	12,998	4,296	Port Dalhousie	1,122	691
Ayr	293	227	Georgetown	2,426	833	Port Dover	646	750
Baden	647	168	Glencoe	252	230	Port Rowan	144	171
Beachville	731	167	Goderich	1,913	1,361	Port Stanley	513	825
Beamsville	680	399	Granton	72	85	Preston	4,584	1,689
Belle River	252	314	Grimsby	1,099	655	Princeton	154	98
Blenheim	842	560	Guelph	12,879	5,703	Queenston	143	81
Blyth	163	184	Hagersville	1,305	406	Richmond Hill	702	414
Bolton	269	172	Hamilton	165,731	43,700	Ridgetown	725	599
Bothwell	197	185	Harriston	549	378	Riverside	1,875	1,559
Brampton	3,552	1,627	Harrow	635	350	Rockwood	182	174
Brantford	23,649	8,337	Hensall	292	210	Rodney	196	239
Brantford Twp.	2,051	1,476	Hespeler	3,145	825	St. Catharines	28,188	8,742
Bridgeport	241	178	Highgate	110	107	St. Clair Beach	126	102
Brigden	113	125	Humberstone	754	738	St. George	244	154
Brussels	191	256	Ingersoll	3,605	1,568	St. Jacobs	370	141
Burford	314	235	Jarvis	208	163	St. Marys	1,870	1,076
Burgessville	60	64	Kingsville	883	641	St. Thomas	9,451	4,718
Burlington	2,042	1,234	Kitchener	31,167	8,718	Sarnia	8,556	5,403
Burlington Beach	664	732	Lambeth	195	140	Scarborough Twp.	6,944	5,950
Caledonia	485	452	LaSalle	374	259	Seaforth	1,268	524
Campbellville	56	50	Leamington	2,490	1,688	Simcoe	3,187	1,678
Cayuga	195	186	Listowel	1,589	801	Smithville	232	185
Chatham	9,054	4,575	London	46,375	19,859	Springfield	107	133
Chippawa	454	364	London Twp.	805	494	Stamford Twp.	4,138	2,497
Clifford	134	130	Long Branch	1,959	1,564	Stoney Creek	364	289
Clinton	792	593	Lucan	255	186	Stouffville	429	408
Comber	208	120	Lynden	143	105	Stratford	8,280	4,561
Cottam	128	131	Markham	462	350	Strathroy	1,679	876
Courtright	69	91	Merlin	161	124	Streetsville	224	208
Dashwood	149	102	Merritton	10,143	962	Sutton	297	468
Delaware	99	71	Milton	1,620	555	Swansea	3,954	2,096
Delhi	926	609	Milverton	491	263	Tavistock	714	300
Dorchester	145	157	Mimico	3,920	2,306	Tecumseh	561	711
Drayton	167	167	Mitchell	859	521	Thamesford	303	147
Dresden	572	466	Moorefield	95	56	Thamesville	301	243
Drumbo	129	90	Mount Brydges	149	166	Theford	150	166
Dublin	49	61	Newbury	42	70	Thorndale	97	83
Dundas	3,446	1,458	New Hamburg	717	384	Thorold	3,751	1,274
Dunnville	1,889	1,063	Newmarket	2,335	1,022	Tilbury	1,300	502
Dutton	302	234	New Toronto	11,935	2,027	Tillsonburg	1,937	1,243
East York Twp.	13,043	11,918	Niagara Falls	13,282	4,984	Toronto	434,315	154,302
Elmira	1,598	554	Niagara-on-the-Lake	1,092	623	Toronto Twp.	4,546	3,065
Elora	480	355	North York Twp.	12,837	7,019	Wallaceburg	5,305	1,387
Embro	170	125	Norwich	539	391	Wardsville	65	65
Erieau	175	197	Oil Springs	215	104	Waterdown	374	280
			Otterville	141	143	Waterford	600	397
						Waterloo	6,715	2,306
						Watford	433	312

MUNICIPAL LOADS, NOVEMBER, 1945

	H.P.	Domes- tic Con- sumers		H.P.	Domes- tic Con- sumers		H.P.	Domes- tic Con- sumers
Welland -----	12,393	3,264	Neustadt -----	48	110	Kemptville -----	459	393
Wellesley -----	154	137	Orangeville -----	1,002	746	Kingston -----	18,523	7,867
West Lorne -----	276	227	Owen Sound -----	7,625	3,663	Lakefield -----	600	360
Weston -----	5,735	1,700	Paisley -----	194	202	Lanark -----	126	173
Wheatley -----	236	237	Penetanguishene -----	1,262	773	Lancaster -----	66	116
Windsor -----	50,419	26,909	Port Carling -----	137	211	Lindsay -----	3,760	2,289
Woodbridge -----	791	314	Port Elgin -----	651	509	Madoc -----	264	318
Woodstock -----	9,690	3,448	Port McNicoll -----	120	241	Marmora -----	185	249
Wyoming -----	130	166	Port Perry -----	398	381	Martintown -----	51	56
York Twp. -----	27,664	21,946	Priceville -----	10	38	Maxville -----	139	176
Zurich -----	156	149	Ripley -----	174	129	Millbrook -----	131	182
(66 2/3 - Cycle)			Rosseau -----	36	58	Morrisburg -----	405	444
Bronte -----	245	244	Shelburne -----	338	314	Napanee -----	1,730	897
Oakville -----	1,811	1,285	Southampton -----	553	567	Newcastle -----	271	230
Trafalgar Twp. -----	829	573	Stayner -----	315	341	Norwood -----	223	242
GEORGIAN BAY DIVISION			Sunderland -----	117	140	Omeme -----	241	173
(60 - Cycle)			Tara -----	173	164	Orono -----	136	183
Alliston -----	568	447	Teeswater -----	226	233	Oshawa -----	19,083	6,765
Arthur -----	215	199	Thornton -----	48	67	Ottawa -----	42,152	15,658
Bala -----	149	336	Tottenham -----	158	161	Perth -----	2,021	1,110
Barrie -----	5,333	2,471	Uxbridge -----	463	423	Peterborough -----	18,010	6,702
Beaverton -----	318	331	Victoria Harbour -----	73	271	Picton -----	1,734	1,336
Beeton -----	123	148	Walkerton -----	1,175	687	Port Hope -----	2,945	1,455
Bradford -----	284	291	Waubaushe -----	124	235	Prescott -----	1,565	815
Brechin -----	56	53	Warton -----	479	437	Renfrew -----	211	230
Cannington -----	266	262	Windermere -----	30	64	Richmond -----	88	85
Chatsworth -----	132	108	Wingham -----	781	560	Russell -----	101	119
Chesley -----	656	456	Woodville -----	99	116	Smiths Falls -----	3,427	2,012
Coldwater -----	212	159	EASTERN ONTARIO DIVISION			Stirling -----	439	293
Collingwood -----	2,753	1,650	(60 - Cycle)			Trenton -----	6,104	1,833
Cookstown -----	124	119	Alexandria -----	481	415	Tweed -----	406	321
Creemore -----	216	176	Apple Hill -----	53	66	Warkworth -----	104	135
Dundalk -----	297	210	Arnprior -----	1,546	891	Wellington -----	304	343
Durham -----	453	464	Athens -----	136	183	Westport -----	135	149
Elmvale -----	213	191	Bath -----	52	64	Whitby -----	1,922	1,054
Elmwood -----	88	72	Belleville -----	8,801	3,939	Williamsburg -----	130	86
Flesherton -----	96	126	Bloomfield -----	145	181	Winchester -----	403	309
Grand Valley -----	218	184	Bowmanville -----	3,546	1,234	THUNDER BAY SYSTEM		
Gravenhurst -----	1,614	593	Brighton -----	596	563	(60 - Cycle)		
Hanover -----	1,558	850	Brockville -----	5,478	3,101	Fort William -----	19,012	73,332
Holstein -----	23	63	Cardinal -----	391	394	Nipigon Twp. -----	326	243
Huntsville -----	1,428	744	Carleton Place -----	1,972	1,076	Port Arthur -----	26,086	6,099
Kincardine -----	813	741	Chesterville -----	385	248	NORTHERN ONTARIO		
Kirkfield -----	26	37	Cobden -----	165	160	PROPERTIES		
Lucknow -----	427	287	Cobourg -----	2,570	1,443	Nipissing District		
MacTier -----	135	128	Colborne -----	311	285	(60 - Cycle)		
Markdale -----	235	231	Deseronto -----	332	395	North Bay -----	5,969	3,379
Meaford -----	879	757	Finch -----	120	107	Patricia District		
Midland -----	5,179	1,625	Frankford -----	196	262	(60 - Cycle)		
Mildmay -----	195	184	Hastings -----	168	238	Sioux Lookout -----	413	512
Mount Forest -----	744	502	Havelock -----	227	295	Sudbury District		
			Iroquois -----	368	279	(60 - Cycle)		
						Capreol -----	315	344
						Sudbury -----	12,561	8,734

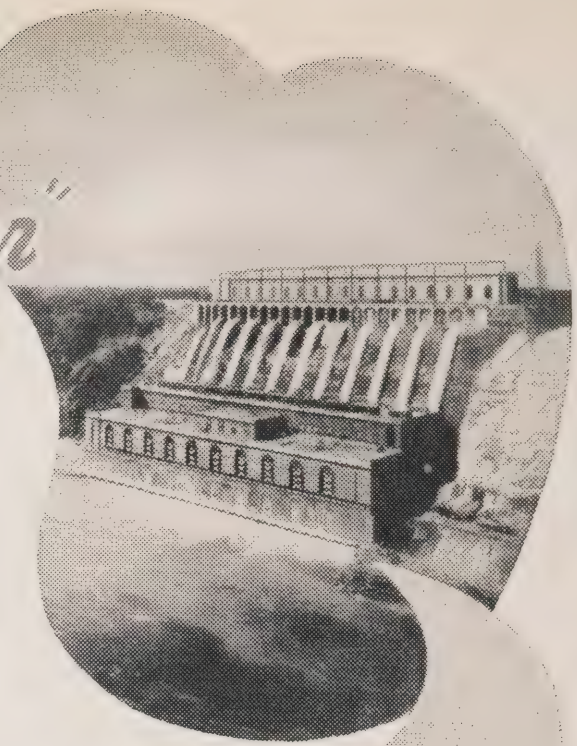
HYDRO provides fast, dependable

"Made to order" SERVICE

Do you realize that Hydro power must be made to your order . . . made and delivered to you so quickly that it would seem to be always there? Electricity cannot be stored. It must be made within a tiny fraction of a second of the time it is used. The flow of water to the generators is controlled by sensitive automatic gates, so as to make only enough for the demands of the moment.

Whenever you flip a switch, you use electricity before the water which made it can leave the power house. Your order is received and filled faster than a good camera can wink its eye. Yet the power comes to you through a giant transformer station, a local distribution station, a small transformer near your home . . . all connected by many miles of transmission and distribution lines.

Millions of dollars worth of equipment and a multitude of watchful personnel stand ready to serve you at the touch of your finger on a switch at any moment of the day or night. That is what Ontario has learned to expect from Hydro service.



Queenston-Chippawa
Generating Plant

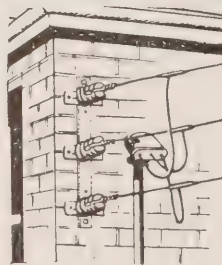


Burlington
Transformer Station



A Municipal Distribution Station

ONLY THIS ONE PART DEPENDS ON YOU



Your house must be adequately wired if you are to have full benefit from the electricity you may want to use. If your place is wired for a range and a water heater, you can assume that you have enough wiring from the small transformer to your house. From there, be sure that you have enough circuits and plenty of outlets conveniently placed in every room. Remember that any one outlet can supply only a limited amount of power efficiently and safely. Remember, too, that you will want an ever-growing number of electrical conveniences in the years to come. The economical time to wire adequately is when you are building or making major alterations. Plan now for your electrical future by wiring completely.



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HYDRO *News*

HARBINGERS OF SPRING

VOL. 33

MARCH, 1946

NUMBER 3



When one more is a crowd!

When the family comes home, or friends are caught in town without hotel accommodation, you can always make room for one more . . . if Dad will sleep on the chesterfield. But sometimes there simply is no room for one more.

Take the home that is not adequately wired, for instance. That new sandwich grill may be one appliance too many for the circuit to carry. The new kitchen mixer may be out of luck for a convenient wall outlet to operate from. Where to put that frozen-food cabinet may be a bigger problem than finding one you can buy. The wall outlet in the chosen corner may be already "overloaded" because of improper distribution of outlets per circuit.

When you build or remodel, be sure that your home is adequately wired. Be sure that it is ready to receive the new electrical appliances that you will be wanting to add from time to time. Employ a reliable electrical contractor, and see that there are plenty of outlets in every room, and circuits enough to serve them all adequately.

Your Hydro supplies power at rates that are among the lowest in the world. If you are to have full advantage of its convenience, your home must be adequately wired.

*If you are improving or building a home, ask your Hydro for the booklet,
"Adequate Wiring for the Postwar Electric Homes of Canada."*



THE HYDRO - ELECTRIC POWER COMMISSION OF ONTARIO

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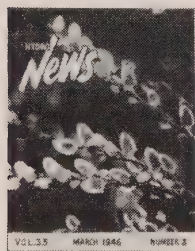
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THE FRONT COVER



"CAN you do some-
thing about hurrying
Spring along?" the edi-
tor asked J. H. Mackay one
bright sunny morning re-
cently. Mr. Mackay smiled
a knowing smile, reached
for his camera and went out
of the office doing a gavotte
while whistling Mendel-
ssohn's Spring Song. What
did he do about it? Why, a
photograph of pussy wil-
lows—harbingers of Spring
—which are portrayed on
this month's interesting front
cover illustration.

Volume 33

March, 1946

Number 3

CONTENTS

	Page
Where They Handle Big 'Uns	2
Page Three	3
North Of The Fiftieth Parallel	4
When Day Is Done	10
Around The Hydro Circuit	14
Caxton Drops In	15
W. Ross Strike Speaks At St. Thomas	21
Down Through The Years	22
Hydro Home Forum	25
Uxbridge	26
Lighter Lines	28
This And That	29
Downwords	31
Monthly Load Summary	31





ONE HAS to have more than a good line to land a fish like this. You need a good stout net thrown into the waters around the Albany and Ogoki rivers in Northern Ontario. Here is one of them—just an average-sized sturgeon—which was flown with a few of his brothers to Hudson where Frank Bowman, pioneer of that district and the proprietor of a thriving fish business, and his men went into action. Mr. Bowman, who is shown immediately behind the fish, says they do come bigger. He recalls one 6 feet in length and weighing 160 lbs.

* Page Three *

NOT VERY LAMB-LIKE

Menallo: I would choose March, for I would come in like a lion.

Tony: But you'd go out like a lamb.

—John Fletcher (1624)

NO one knows where the lion and lamb tradition began. The trouble in this country is that March is quite likely to come in with the roaring of a lion and go out in the same way. Actually there is rarely anything lamb-like about our weather until the end of April.

March is named after Mars, the Roman god of war. But if it hadn't been for the fact that our Anglo-Saxon ancestors carelessly allowed their country to be over-run by the Romans we would still be calling the month Hyld-monath which means loud or stormy month and which seems considerably more suitable.

The Romans chose March as the first month of the year, and it was not until they adopted the Julian calendar in 46 B.C. that January took its place. The English, always slow to make a change, used March as the first month of the legal year until the year 1752.

The chief emotion that March rouses in this country is similar to the one you feel when you've been brazenly cheated by someone and don't quite know what to do about it. Because one feels that it OUGHT to be spring. This is quite a lot the fault of the poets who continue to write about March primroses, baby lambs and so forth. But all we get is more snow, cutting winds, colds in the head and that dreary, shabby feeling that comes when the first sun lights up our pale winter faces and worn winter coats.

The month is slightly brightened by the festival of the good St. Patrick. Scholars may discuss him as a pious and hard-working Christian missionary sent from England to enlighten the barbaric Irish. But the children know better. To them he is a benevolent, white-bearded figure wearing paddy green robes sprinkled with shamrocks and wielding a twisted rod to charm all the snakes of Ireland. And in his retinue are Irish fairies, plump Irish pigs with green ribbons around their necks and spry, red-whiskered little men smoking clay pipes and dancing merrily to the jig of Irish pipes.

A STITCH IN TIME

ELECTRICITY when first introduced in the home was looked upon merely as an improvement in lighting. It was a big improvement. It did away with the danger attendant upon children and thoughtless adults filling lamps with kerosene near open fires and overheated stoves. Today, however, Hydro power has long passed the stage when, domestically speaking, it may be regarded as just a better source of illumination. Most of the important chores around a house can now be accomplished by the use of electrical appliances, and when these can again be freely purchased, there seems to be little doubt that there will be an increasing desire throughout Ontario to enjoy the benefits that household electrical installations bring, and that the demand for electric refrigerators, stoves, washing-machines and heaters will be particularly heavy.

NOW is the time, before these time-saving devices are purchased, to check up on the house-wiring. In order that anything like the full benefits of Hydro may be enjoyed, it is estimated that three percent of the cost of the house should be allocated to wiring.

It has been noted that women are becoming increasingly wiring-conscious when they inspect a new home. They want to know if the wiring service is adequate for an electric range, refrigerator, electric grate, flat-rate water heater, electric clothes dryer and other electrical equipment.

The importance of adequate wiring cannot be over-emphasized. It is a job which should be done at the time when a home is being built or, in the case of an old home, when it is being remodelled.

With adequate wiring once installed, the householder may be said to be well away. His chagrin, if any, at the comparatively light cost, will soon be changed to pleasure when he—and more important still, his wife and family—begin to enjoy to the full the advantages that electrical labour-saving devices afford.

This is the kind of stitch which, if made in time, will save plenty of headaches and regrets.



FOURTH ARTICLE

*By The
Editor*

THEY don't waste time telling tall fish stories around Hudson, Ontario. There, they believe in deeds and not words.

For instance, there was the memorable experience Hydro News had after meeting Frank W. Bowman, who is recognized as the original pioneer at Hudson and who is to-day the proprietor of a thriving fish business. Naturally the discussion got around to piscatory matters and when Frank was asked about the size of the fish he handled, he disappeared into one of his sheds and, a minute later, reappeared again, followed by two husky employees who staggered out with a sturgeon that was almost as big as themselves. We could not believe our eyes at first and, just in case anyone doubted our story, we obtained the photographic evidence reproduced on page two of this issue.

Fish Rushed By Plane

To Mr. Bowman and his employees, however, it was just another fish and only an average one at that!

And what about the biggest fish they've handled up there? Well, it was a 160-lb. sturgeon, 6 feet in length.

This one fooled Mr. Bowman at first for it was brought to the pier in a canoe and it was wrapped in a tarpaulin. The outward appearance caused Mr. Bowman some apprehension—until the covering was pulled back!

These sturgeon, Hydro News learned, are caught in the vicinity of the Albany and Ogoki rivers and they are rushed by plane—a three-hour trip—to Hudson, each trip representing a catch of between 1,200 and 1,500 lbs. On arrival, the fish are quickly cleaned and the caviar or sturgeon roe, removed. When packed in ice, most of this fish and caviar are shipped to the United States. In many of the big hotels people really "go for" the caviar—the sturgeon roe which is pickled and eaten as relish.

Hydro On The Job

A man who really knows his business, Frank Bowman has been at Hudson since 1920. He organized the Chamber of Commerce there in 1927-28 and has been its president since that time. While still a typical pioneer settlement, Hudson has now a few other thriving enterprises including the C. W. Cox Lumber Company and the Patricia Transportation Company headed by James McLellan who, incidentally, suffered painful injuries in making his escape from the Red Lake hotel when it caught fire and was destroyed last year. Mr. McLellan's right hand man is "Slim" Dart, the office manager.

Another well-known figure in the Hudson district is "Monty" Mumford of the Cochrane-Dunlop Hardware.

These are but a few of the many friendly people



FLYING ALONG the Uchi line in the Patricia District, Hydro News made short stops at Kaw Lake (left), Fry Lake (centre) and Slate Falls (right) where Isaac Waive, Walter Later and Carl Odmark, stationed at these respective points, were on hand to extend a welcome. These patrolmen's cottages (left and right) are well-built, warm and comfortably-appointed.

Hydro News met during a brief stop-over at Hudson which has a population of approximately 600 and a floating population which varies.

Hydro, of course, is on the job at this rugged Northern Ontario settlement where we met Art Stewart, patrolman; Len Mersereau, assistant patrolman; and other Hydro folk including Arnold Kleven, Harry T. H. Pringle and Alfred Bicknell.

One of the highlights of the Hudson stop-over was the visit paid to Mr. and Mrs. Mike Ament at their camp near Sioux Lookout. Here one finds what might be described as restful solace in a setting which combines all the rugged beauty and peaceful enchantment of Ontario's great North Country.

An Important Link

At Sioux Lookout Hydro News found lodging in another of these hotels where the rooms are unpretentious but comfortable—a hotel in which the guests who are fastest on foot and keenest of ear are the first to enjoy the important amenities.

This spot gives the impression of a young boy who has grown very quickly but who has not developed a physical stature that is in keeping with that growth. But make no mistake about it, Sioux Lookout is a key point on the map of Ontario and may very well assume the proportions of a great city in the years to come. It is an important link on the Northern air chain, a busy railway junction, a place where there are in excess of 500 domestic consumers of Hydro power and where the load is over 400 horsepower.

While at Sioux Lookout Hydro News had a particularly interesting experience in that the opportunity was presented for an inspection of the facilities and equipment used in combating the dread menace of the bush country—forest fires.

In the office of Keith Acheson, District Forester for the Sioux Lookout District, is a massive map on which are recorded all essential data as to where forest fires

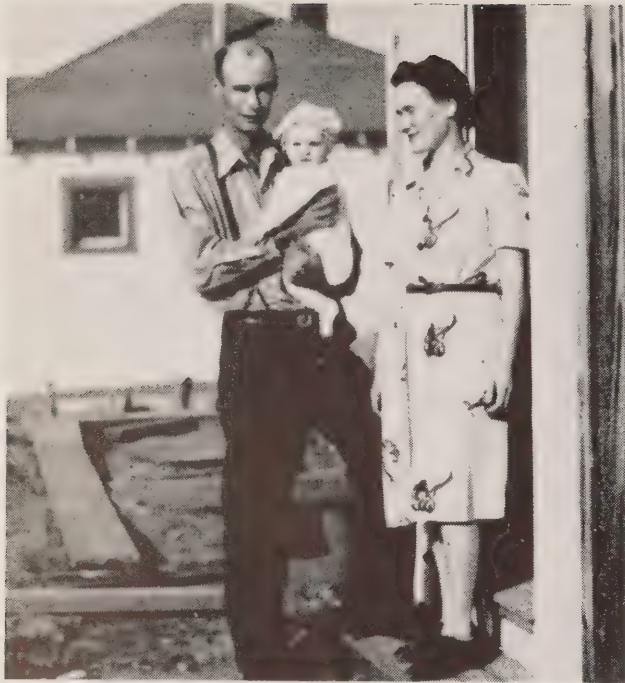
have occurred, where new outbreaks have been reported, the boundaries of the forest fire ranger patrols, lookout towers and other information.

The district, Hydro News was informed, is divided into five divisions, each being staffed by a chief ranger and up to twenty men. The boundaries of the district run from Tashota on the Canadian National west to the Manitoba boundary, north to the 52nd parallel and north-east to the Ogoki river.

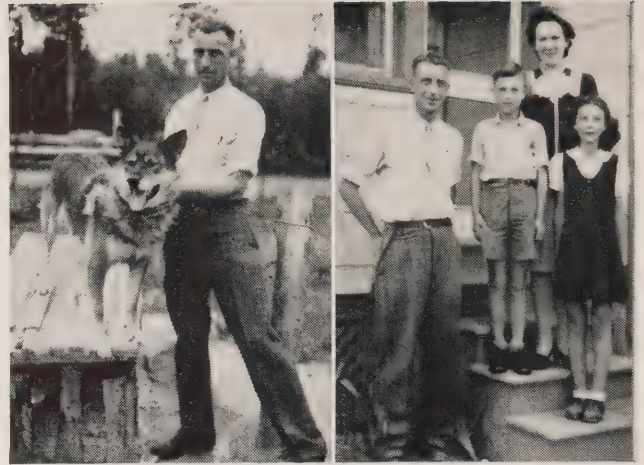
This entire area is patrolled by planes equipped with



A MAN who is responsible for the welfare of approximately 5,000 Indian people in the Sioux Lookout district, Gifford Swartman (left) with his wife and two sons, Andrew and Peter, can talk to the Indians in their own language. On the right are Len Mersereau, assistant Hydro patrolman at Hudson, and his wife.



WHEN HYDRO News arrived at Uchi, George Kleinendorst, patrolman, and his wife, accompanied by the baby, stepped out of their home and the camera clicked with the above result.



ART STEWART, patrolman at Hudson, is shown above (right) with his wife and family. On the left, Art faces the camera with one of his fine dogs.

two-way radio, thus enabling the pilot to keep in touch with his headquarters. When the forest fire hazard is at a minimum, there is one patrol daily and when the hazard is high there are morning and afternoon patrols.

At the various divisional fire ranger headquarters are pumps, hose, axes and all other necessary equipment used by these forest fire fighters who, on an outbreak being reported, fly with their equipment to a strategic point in the line of the fire. Before taking off, the map is checked for necessary information as to the direction of the fire, the area it covers and the location of a lake where planes can land.

Constant Vigilance Maintained

The importance of this constant vigilance on the part of these men, who are rendering a vital service, was brought home in a very vivid way to Hydro News when we visited a section in the Central Patricia area which had been ravished by a fire on July 30 of last year. Great trees had been reduced to powdered ash; in some cases, charred stumps remained to tell a graphic story, while here and there one could see the blackened skeletons of once-fine trees that might have made their contribution to the economic life of Ontario had they been spared.

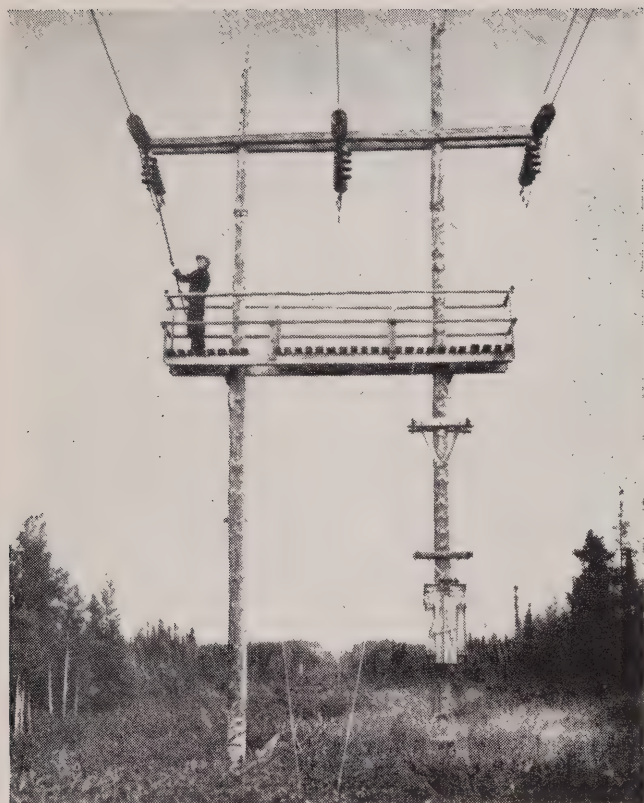
Three hundred men, using 6 pumps and 50,000 feet of hose, fought that fire for from 8 to 10 hours before getting it under control. About a square mile of good timber was destroyed. The cause of that fire? A cigarette butt, according to authoritative sources.

There was one remarkable feature about this particular fire. It occurred in an area through which cuts a Hydro transmission line, and only one Hydro pole was badly burned.

When Hydro News was leaving the Sioux Lookout fire ranger headquarters after seeing the planes, the garage and stores of equipment, Mr. Acheson remarked: "Please warn your readers of the danger presented by for-



THIS GROUP of people represented eight-ninths of the population of Uchi when Hydro News visited this ghost town in the Patricia District of Northern Ontario a few months ago. Included in the group are George Kleinendorst, Hydro patrolman at Uchi, his wife and baby and two other Hydro men, Lorne McKenna of Uchi, and Lee Parker of Hailstone Lake.



THIS IS a section of Hydro's Uchi line in the Patricia District. Carl Odmark, patrolman at Slate Falls, is shown above in the act of tightening the clamp on a lead wire.



WILLIAM (BILL) Dowds, superintendent of the Patricia District, shows Edithemmu Muir, the Hydro home economist, the one Hydro pole which was damaged in a serious forest fire which occurred in the district last summer. The other poles in the fire area miraculously escaped damage. Three hundred men fought this fire for 10 hours, using 50,000 feet of hose and 6 pumps.

est fires. Ask them to co-operate with us when they visit Northern Ontario by seeing to it that all camp fires are carefully extinguished and that no lighted cigarette butts are carelessly tossed out of automobiles or thrown away while in the bush. Carelessness may cause serious catastrophes."

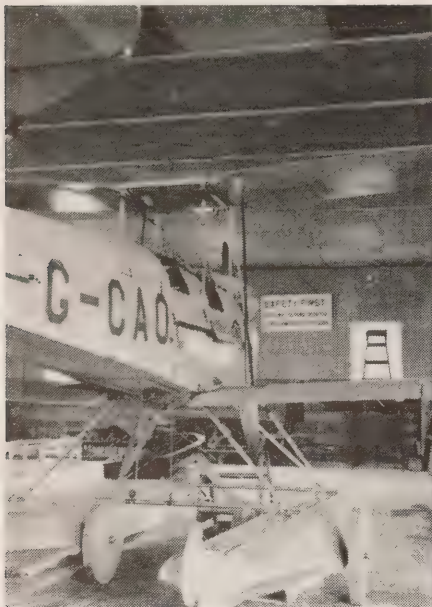
From the first-hand observations already mentioned, Hydro News can bear witness to the seriousness of this menace and why it is so important that Mr. Acheson's words be heeded—and acted upon—at all times and in all places.

Big White Chief

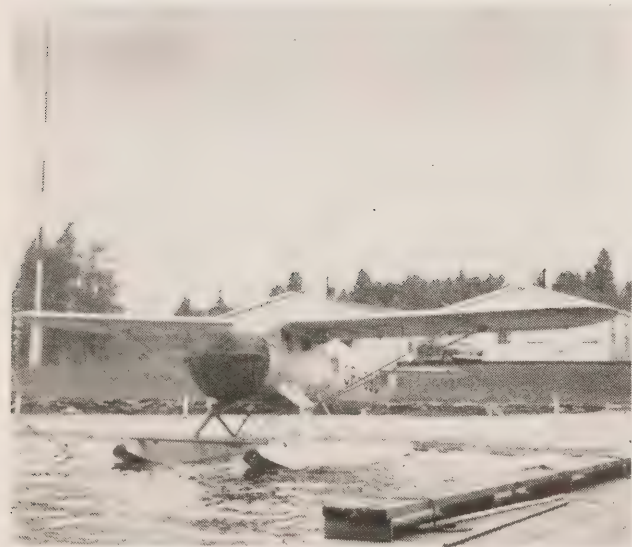
While in Sioux Lookout, we met another interesting personality in the person of Gifford Swartman, a big white chief to whom some 5,000 Indians come each year for guidance. As Indian Agent for the largest territory in Ontario, extending from the Manitoba boundary to Nakina and north to James Bay from Sioux Lookout, Mr. Swartman is a man who not only knows these people intimately but he can talk their language. In addition, he serves on the local Hydro commission and has taken an active interest in fostering plans for adequate school lighting. After having served as a Pilot Officer in the R.A.F. in the First World War, Mr. Swartman was numbered among those who



AT RED Lake, the home of J. A. (Jack) Follansbee, the municipal superintendent, is also the Hydro Office. Mr. Follansbee is shown above with his wife in front of the home-office.



FOREST FIRES constitute a serious menace to human life, valuable timber and property in the bush country of Northern Ontario. The above left illustration shows one of the fire rangers' planes in a headquarters garage. Keith Acheson, District Forester for Sioux Lookout District, is shown in the upper centre illustration. The photograph below indicates what a forest fire does to trees. Pumps (right) are an important part of the equipment used in fighting forest fires.



HERE IS one of the trim planes used by forest fire rangers. When the hazard is high, two patrols are made daily.

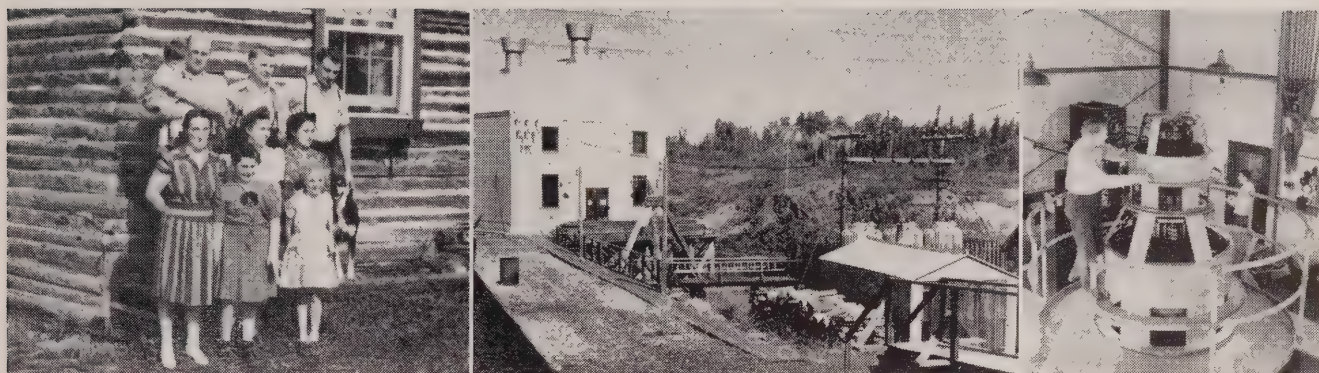
helped pioneer the Alcan-Siberian air route. He was born at Waubaushene, Ontario, attended school at Woodstock and graduated from Queen's University in 1924 with a science degree and a reputation as an all-round athlete. Mr. Swartman's home is one of these seed catalogue dream retreats, located in a sylvan setting of terraced carpet-like

lawns and a wealth of flowers and shrubs. But Mr. Swartman's pride is not all centred in his garden. There are other important matters which occupy his attention. For instance, there is his very charming and capable wife, and there are two fine sons, Andrew and Peter, who all make an important contribution to the beautification of the Swartman homestead.

There were other meetings, interviews and experiences which cannot be overlooked in this "North Of The Fiftieth Parallel" series. One of the many interesting highlights of the trip was the flying visit along 150 miles of the Uchi line, and it was a flying visit for a number of reasons. First, plane is the only means of transportation in this section of bush country and, of course, it is much faster than portaging, hiking and swimming, and secondly, the schedule provided for about an hour's stop at each of the key points visited.

Taking off from Central Patricia, we were soon high in the bright morning sky watching the moving shadow of the plane as it flitted across bushland, lake and rivulet below. Anyone who has travelled by air in the North Country cannot but be impressed by the tremendous vastness of this hinterland—miles and miles of bush, lakes and clearings as far as eye can see. From "upstairs" it all assumes the appearance of a gigantic table-top setting of carrot tops, mirrors and small stones.

Cruising along, we picked up the Uchi line—the Hydro transmission line which threads its way through 150 miles of bush country. How small and fragile that line looks from the air! Just like a thread, but it's a vital



ARRIVING AT Rat Rapids—in time for a very fine lunch—Hydro News spent about two hours with the people of this small but happy Hydro colony. Included in the group (left) are Ivan Sidor, Mr. and Mrs. Clarence Erickson and their children, Marlene, aged 10, and Edwin, 14 months; Mr. and Mrs. Joseph Campbell, and their two daughters, Lillian, aged 19, and Gloria, aged 7. A general view of the Rat Rapids plant is shown in the centre, the generating unit being shown on the right.

artery of Hydro power reaching into the remote communities of the North. First stop along this line was at Kaw Lake, where Hydro News met Isaac Waivie, an Indian employee of the Commission, received a rousing welcome from the latter's dogs and saw the first of the well-built and neatly-kept patrolmen's cottages which are located at key points and which are linked by Hydro telephone with the Ear Falls' generating plant.

A short stop, and again the plane propeller was whirling and its pontoons were churning up the inviting waters of Kaw Lake. Up in the air we again followed the shadow of the plane and the thin ribbon of Uchi line. At one point we saw a great bear come into a clearing and reach up on his haunches as if challenging the intrusion of a mechanical bird into his domain. The next patrolman's cottage at Fry Lake was first sighted from the air. As the plane taxied towards the landing, Walter Later, Hydro patrolman, was on hand with a camera ready to "shoot" his visitors. Slim, wiry and agile, Walter is the kind of fellow who appears to be always "on the go". When he's not patrolling his section of the Uchi line, he's either tending his garden, fixing a porch or doing all the things one finds a good homemaker doing, such as preserving, making pickles, baking and cooking, with a spot of sewing and hunting thrown in and some time left over to add to his extensive photograph album. As a cook, Walter can hold his own in the best of company, as Hydro News can testify from the lunch which he provided. (He will, we understand, supply his recipe for preserving peaches to anyone who may be interested.)

Arrive At Ghost Town

At Slate Falls, Hydro News found another good housekeeper in the person of Carl Odmark, who also extended a warm and enthusiastic welcome. Carl, too, has a garden and is a handy man with tools. Like Walter Later and other Hydro patrolmen, he has to make routine patrols and is on call at any hour if line trouble develops. The close liaison maintained between the Ear Falls plant

(Continued on page 33)



SCHOOL'S IN! Here Mrs. Alice Erickson, a former high school teacher and now the wife of Clarence Erickson, first operator at Rat Rapids, gives instruction to her daughter, Marlene, aged 10, and to Gloria Campbell, aged 7. The classroom is a room in her own home where she has a blackboard.



CHAPTER 1: STREET LIGHTING

By Mildred C. Redmond, Hydro News

WITH the war over and with attention now being given to the implementing of postwar plans, street lighting is one topic which is being discussed in many Ontario communities. George Cousins, Hydro supervising lighting engineer, says that interest in this subject is growing in all parts of the province and many municipalities are making plans for extensive improvements. The Hydro Lighting Service has already been able to help a number of communities by making available complete street lighting plans. The fact, said Mr. Cousins, that during the past few decades, lighting has not kept up with the advances made in transportation and that accidents are increasing, makes better lighting systems imperative.

From the very dawn of history, one of man's most urgent problems has been the fight against darkness. As soon as the sun went down his whole familiar world was blotted out and he was left to the mercy of the real and imagined terrors of the night. The first round was won with the discovery of fire. First he learned to pull a burning brand from the fire and set it up in a dark corner of his cave, and later he found the trick of burning a wick with its end sunk in animal or vegetable fat. Now, with his rooms lighted, he no longer had to go to bed promptly at sunset. But the next problem was how to get about at night. If he wanted to visit a neighbour or go out on business the only solution was to carry a brand from his fire. And that is what he did for many a long century. He could grope his way through the woods or streets with his torch, but there were plenty of hazards. Thieves and robbers lay in wait for anyone rash enough to venture out in the darkness and the torch, admittedly, served more to mark the victim than to protect him.

Primitive man made no attempt to organize any sort of outside lighting. The Romans, those practical-minded realists, were apparently the first to try lighting their streets. In the fourth century A.D., according to Libanius, there was systematic street lighting, oil lamps were used suspended in some manner on poles.

But after the Romans, Europe was plunged once more into darkness and it was not for another thousand years

*S*INCE the dawn of history, the fight against darkness has been one of man's most urgent problems. In this, and in succeeding articles in this series, Miss Redmond traces the history of light from the primitive days of brands and torches down to the lighting of modern times.—The Editor.

that the idea of trying to make night travel safe by lighting was brought out and tried. The worthy citizens of medieval Europe were not slow to voice complaints of the shocking state of night travel. "When night is come no man durst adventure to walk in the streets," writes one.

In 1416 the Mayor of London decided to cope with the problem. He ordained officially "lanthorns with lights to bee hanged out in the winter evenings betwixt Hallowtide and Candlemasse." In Paris, about the same time, street robberies were such a menace that the inhabitants were ordered to keep lights burning in the windows of all houses that fronted the streets. A short time later Paris police ordered fallots (large vases filled with pitch, resin and other combustible material) to be set up at street corners. (It might be noted here that to this day when a "pea-soup" fog hits London the modern lights are of little use and the city presents a medieval appearance with torches burning at every corner). In 1662 an Italian with an eye to business obtained a concession to erect in Paris and other French towns booths where links or lanterns might be hired by night passengers, the charge being five sous per lantern to accompany a coach and three sous per foot passenger per quarter hour, the "taximeter" being an hour glass carried with each lantern.

For the next few hundred years the history of street lighting consisted of a struggle between the authorities and the common citizens, the latter stoutly resisting any attempt to be held responsible for the lights in their own streets. They were sternly reminded of their duties and even threatened "on pains and penalties to hang out their lanthorns at the appointed time."

In 1668, when some regulations were made for improving the streets of London the inhabitants were ordered "for the safety and peace of the city to hang out candles duly to

the accustomed hour." The general lack of enthusiasm on the part of the citizens resulted in the Lord Mayor being busy for decades issuing threats and commands. In 1679 he spoke sternly of the "neglect of the inhabitants of this city in hanging out their lights at the accustomed hours according to the good and ancient usage of this city and Acts of the Common Council on that behalf." This neglect resulted in a state described by a contemporary writer in these words: "When nights darken the streets then wander forth the sons of Belial flown with insolence and wine." These ordinances continued with evasions and little effectiveness until the time of Queen Anne.

Whale-Oil Lamp

In 1694 Hemig patented a reflector which partially surrounded the open flame of a whale-oil lamp and had a hole in the top to help ventilation. He managed to get the exclusive rights to light London for a period of years and planned to place a light in front of every tenth door between the hours of six and twelve o'clock from Michaelmas to Lady's Day. Anyone out after midnight obviously took their life in their hands. But opposition to progressive ideas is nothing new and he was opposed by a certain faction which was successful in getting a withdrawal of his license in 1716. The lighting of London returned once more to individual whim.

In 1729 a more efficient plan was thought out by a group who contracted to light the streets of London by

taxing the residents and paid the city for this monopoly. Householders were permitted to hang out a lantern or a candle or to pay the company for doing so. However, robberies still increased rapidly and in 1736 the Lord Mayor and Common Council petitioned Parliament to erect lamps for lighting the city. An act was passed accordingly giving them the privilege to erect lamps where they saw fit and to burn them from sunset to sunrise. A charge was made to the residents on a sliding scale depending upon the rate of rental of the houses. Soon there were 15,000 street lamps in London. Despite these provisions the streets must still have been dark enough, for those who could afford them continued to take link boys to and from their social functions.

By this time most of the large European centres had some sort of public lighting. Dr. Martin Lister, who visited Paris in the reign of Louis the Fourteenth, speaks of lamps hung twenty feet high and twenty paces apart in the streets, these lamps being let down for attention by a pulley arrangement. They were apparently not all oil lamps, but were provided with candles, of four to the pound, which lasted until about midnight. Anyone who broke the glass lanterns was liable to be sent to the galleys.

At the close of the century the street lighting of Paris was associated with violence. The revolutionary mob found that the arrangement of rope and pulley was only too handy as a means of disposing of aristocrats when they couldn't



STREET LIGHTING has come a long way since the days of the lamp on the left. This is a wooden lamp post from early London with an iron basket arrangement on top in which was burned some sort of inflammable material. Shown below is an example of modern highway lighting on the Queen Elizabeth way.



STREET LIGHT from eighteenth century London with a small oil lamp inside. Below it are two link boys whose duty it was to conduct well-to-do citizens through the streets with links or torches. The figure on the left is using a link extinguisher still found on many old houses.

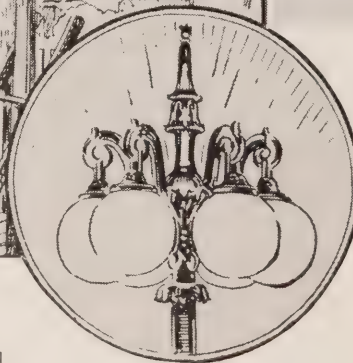


ONE OF the lamp lighters and his small helper (left) in the days when London was lit by oil lamps. Each day the lamp had to be cleaned, trimmed and refuelled. These oil lamps were in use throughout the eighteenth century and into the first decade of the nineteenth when gas lighting was introduced.

BEFORE STREETS were officially lit, the only method of getting about at night was to carry one's own lantern as this lame gentleman (below) of an early century is doing. The lantern, probably, has a metal frame fitted with plates of thin horn and the light inside is a candle.



IN THE early days of gas, the lamp lighter with his ladder was a familiar figure on the streets. The inset shows one of the elaborate early electric street lights, decorative to look at but not efficient for actual lighting.



wait for the guillotine.

In 1780 in Vienna the inhabitants had to take or send street lamps to the lamp office every morning to have them filled with oil and had then to place them in front of their own houses during the night, the lights being supplied by the government. Later a corps of uniformed lamp-lighters, under military discipline, was formed.

Gas lighting was introduced in the streets of London in 1807 in Pall Mall. This was the beginning of public service lighting companies. Westminster Bridge was lit

in 1813 and then Westminster parish set an example by substituting gas lamps for oil throughout their area. In the next decade gas was used generally on the continent. At first the simple open flame was used.

Always there are those who oppose progress and in 1833 in Philadelphia a proposal to install a gas plant was met with a protest signed by many prominent citizens. In

Cologne in 1816 an amusing argument against the new gas lighting was published in the local papers. To quote only a few of the objections:

1. From the theological standpoint: artificial illumination is an attempt to interfere with the divine plan of the world, which has preordained darkness during the night-time.
2. From the judicial standpoint: those people who do not want light ought not to be compelled to pay for its use.
3. From the medical standpoint: the emanations of illuminating gas are injurious. Moreover, illuminated streets would induce people to remain later out of doors, leading to an increase in ailments caused by colds.
4. From the moral standpoint: the fear of darkness will vanish and drunkenness and depravity increase.
5. From the viewpoint of the police: the horses will get frightened and the thieves emboldened.
6. From the point of view of national economy: great sums of money will be exported to foreign countries.
7. From the point of view of the common people: the constant illumination on the streets by night will rob festive illumination of its charm.

This first practical street lighting led directly to great advances in social progress, social intercourse was extended, streets were made safer and hours of activity were greatly increased.

Open gas jets and kerosene-flame lamps were on the streets until living memory; at the end of the nineteenth

century the lamp-lighter with his ladder and "torch" was a familiar figure. He has been immortalized for children by Robert Louis Stevenson in the verse "The Lamp-lighter."

"My tea is nearly ready and the sun has left the sky;
It's time to take the window to see Leerie going by;
For every night at tea time and before you take
your seat,
With lantern and with ladder he comes posting up
the street . . ."

In 1877 came the real start of public lighting by electricity when Mr. Bush illuminated Cleveland's public square with his arc lamps which speedily became popular. Taunton claims to have been the first English town to be publicly lit by electricity.

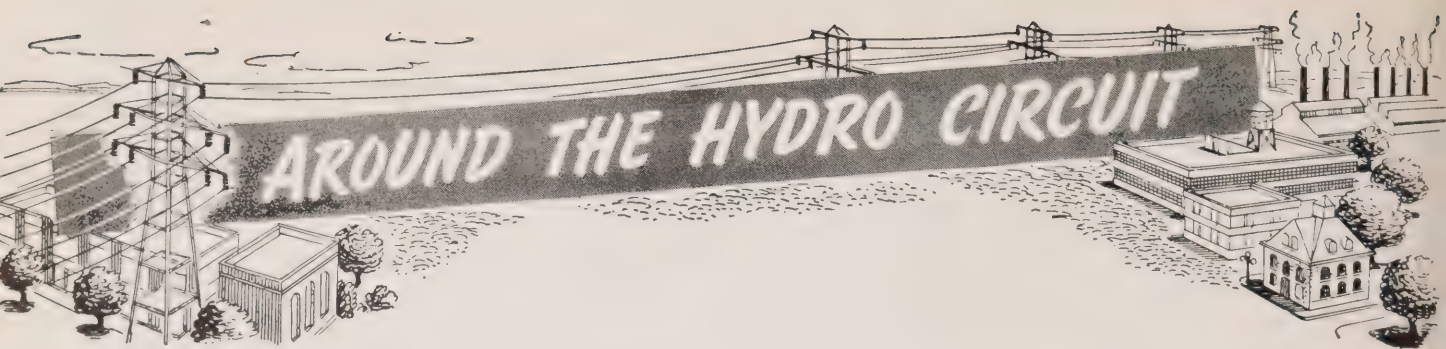
Competition then started between the gas lamp, now equipped with the incandescent mantle, and the electric lamp, principally the arc, first the open arc, then the enclosed arc in 1893 and later the flame arc. Then there followed the development of the incandescent lamp.

At about the time of the introduction of the incandescent lamps a new era in transportation was ushered in with the automobiles, which resulted in changed social and economic habits of people the world over. Increased traffic volume and speed have imposed new and more stringent requirements on public lighting. The chief motive has now become not so much protection from thieves and robbers as protection from the traffic itself which has be-

(Continued on page 30)



GOOD STREET lighting, statistics show, helps reduce the accident rate and, at the same time, assures greater all-round protection for the citizens of a community. The people of Brampton are justly proud of their fine main street lighting which is shown above.



JOSEPH GIBBONS, formerly chairman of the Toronto Hydro-Electric System, died on February 17 at the Lockwood Clinic in Toronto, after ten days' illness.

Born at Linwood, Waterloo County, over 70 years ago, Mr. Gibbons came to Toronto before the turn of the century, where his first job was that of a street car conductor in the days of the horse-drawn cars. Later, when the system was electrified, he was transferred to the Belt Line, where he worked for fifteen years. It was during these years that he became identified with the Street Railway Employees' Union, and was elected business manager, which office he held for many years.

From 1911 to 1914 he served on the Ontario Workmen's Compensation Committee, whose groundwork was later embodied in the Workmen's Compensation Act. During the period 1916 to 1918 he was a member of the War Trade Board. And at one time he was vice-president of the Great Lakes and Harbours Commission.

Mr. Gibbons took an active interest in municipal affairs, and from 1915 to 1918 he was elected alderman for Ward Six in Toronto. From 1920 to 1929 he served as controller, and during 1928 was president of the Toronto City Council.

In November, 1929, he was appointed a commissioner of the Toronto Hydro-Electric System, and became chairman in June of the following year, which position he held until his death.

He was a director of the Ontario Municipal Electric Association in 1930-32 and 1935-37. During 1935 and 1936 he was vice-president of the association, and honorary vice-president since 1938. From 1931 the chairmanship of the Pension and Insurance Committee was his responsibility.

Mr. Gibbons is survived by two children, Louise of Toronto, and Dr. R. J. Gibbons of Ottawa. His wife, the former Margaret Corcoran, died several months ago. Interment was at Mount Hope Cemetery.

Born in Brock Township, Ontario, **ALFRED W. (TED) ST. JOHN** went to schools in both Sunderland and Lindsay. His father, A. W. J. St. John, was superintendent and secretary-treasurer of the Uxbridge Hydro Commission from 1922, when it was formed, until 1937. Upon his retirement that year, Ted St. John left his position with the Canadian National Railways to become secretary-treasurer in his father's place. In his school days Ted was active in both baseball and hockey, and now he has become an equally enthusiastic fisherman.

With rousing operatic delivery many vocalists down through the years have sung: "Give a Man a Horse He Can Ride." If mayor **ARNOLD G. TIPPER** of Uxbridge had written that number the words would probably have been: "Give a Man a Car He Can Drive." The mayor, who serves on the local Hydro Commission, has been in the garage business for many years and is a licensed motor mechanic. In addition, he has served as local examiner for chauffeurs' and operators' licenses since 1926. A native of Huntsville, Mayor Tipper has been a councillor for five years and chief magistrate of Uxbridge for the past six years, during which period he has also been a member of the local Hydro Commission.

One of the signatories for the town of Uxbridge when it joined Hydro in 1922, **ANDREW M. MACPHAIL** has been a member of the local Commission since that time. He was born in Reach Township in 1870 and attended Eldon Township schools. Prominent in municipal politics, he served on the town council for five years and was elected mayor of Uxbridge in 1919 and 1920. Noted in his youth as a baseball player, Mr. MacPhail is now interested in lawn bowling and spends his leisure hours in the summer on the green.

G. ALFRED NEVISON, who is serving his first year as Hydro Commissioner in Uxbridge, was born near that town in 1882, and has spent a good part of his life there. He attended school at Quaker Hill, named after the early settlers, and also at Uxbridge. During his early life he was active in a number of sports and attained considerable prominence in both lacrosse and hockey. At present, outside of his civic interests, Mr. Nevison finds considerable pleasure and relaxation in fishing and shooting.

Combining two positions, that of superintendent of the Rural Power District and acting in the same capacity for the Uxbridge Public Utilities, **NORMAN A. BELFRY** was born in that town around the turn of the century and attended schools at both Hanover and Toronto. Starting with Hydro as a lineman some twenty-two years ago, Mr. Belfry was appointed to his present position in 1936. His leisure time is divided between raising flowers and fishing.

Caxton

By Harry M. Blake, Hydro News



IT was nearly closing time at the Hydro printing shop in Elm street. The superintendent, H. P. Fierheller, was reading over a last letter which Miss Graydon had just typed when Freddie Crowhurst, who operates one of the job presses, burst excitedly into the office.

"There's a parachute coming down, Mr. Fierheller. Looks as if it's going to land on the building."

"A parachute?"

"Yes, sir-ee! Harvey was looking out of the window, and he saw it coming through the clouds. It's headed right for here."

"Some training plane in trouble—they've had to bail out," mused Fierheller. "We'd better go up and see what's doing."

They rushed up the stairs to the roof. Harvey Cook and Stan Johnston were already out there. They were gazing up at a big parachute floating down from the sky.

"He's going to hit the roof, all right," muttered the superintendent. "The pull of the wind is likely to carry him over the edge. If the chute folds up, it'll be just too bad . . . Quick," he shouted to Crowhurst, "you and Harvey stand over there. Stan and I will work from here. Catch on to anything you can, and then flop! Hold on like blazes. There'll be decorations for this!"

The chute was descending fast. As it hit the roof, they all made a grab for the ropes, but their outstretched hands encountered nothing more solid than thin air. The parachute had vanished. But before their startled eyes an elderly man of rather more than middle height, very quaintly dressed, stood bowing and smiling.

"I'm Caxton," the stranger announced.

He pronounced the name so broadly that it sounded like "cox'un". That would be a naval petty officer, the superintendent reflected. He remembered reading something in the papers about a navy costume dance dated that very evening for Toronto. They had probably flown this

chap in from some outside point for the "doings," and to save time they had dropped him in the streets. The full beard and moustache—that was indubitably Navy. In the senior service it was either a clean shave or all the frills. Of course, this fellow looked too old for any rank lower than Admiral of the Fleet, but he might have dyed his hair to go with his costume. In those togs he was wearing he would certainly make a great hit with the boys as the Old Man of the Sea.

"Come on down," Fierheller invited. "One of my boys will drive you over to wherever you're going to stay."

They made their way to the office through a group of hushed but curious employees, who showed none of their accustomed eagerness to break off at the closing hour.

Hydro Works Its Magic

"You have come from quite a distance?" Fierheller asked. "Montreal? . . . Halifax, perhaps?"

The visitor laughed.

"The Great Bear or the Milky Way would be nearer the truth . . . Yea, yea, forsooth yea, I have come from a very great distance indeed."

He sat down on the chair the superintendent pushed forward, and, with the sleeve of his mantle, wiped away the tears that laughter had started in his eyes.

Fierheller was intrigued.

"Do you mind telling me your name?"

"Caxton. William Caxton. I'm the father of English printing."

It was Fierheller's turn to laugh.

"Oh, I see. You're going to the navy dance, and you're made up as Caxton." He turned to his stenographer, who, like the others, had lingered at her work. "Could you make us a cup of tea, Miss Graydon?"

The girl connected up the hot plate and put on the kettle. The visitor looked on with interest mingled with

(Continued on page 18)



AXTON LISTENS with an air of unbelief to a tally of the day's work at the Hydro printing shop.



HARVEY COOK is feeding forms to an automatic high-speed press known as a vertical Miehle. This type of press will handle 4,500 sheets an hour and will accommodate forms up to a size of 11 by 17 inches.

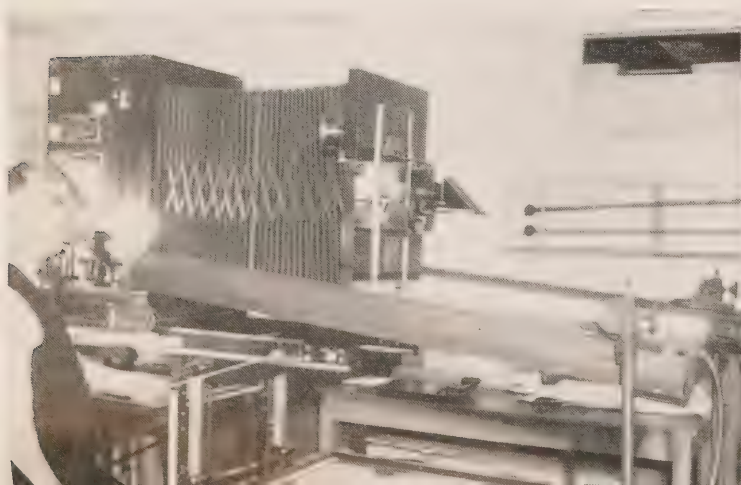


THE BINDERY is one of the busiest sections of the printing shop. From front to back are seen Rosemary Daley, Beatrice Clarke and Rita Clarke, almost too busy for Caxton.



DUPLICATING MACHINES in the printing shop. Jim Virgin, in the foreground is shown operating a mimeograph, while his companion, Ray Clancy, attends to multith.

MAPS, LETTERS, book and magazine pages and photographic line diagrams can be copied faithfully on the photostat machine, which is shown here with Frank Reid doing the operating.

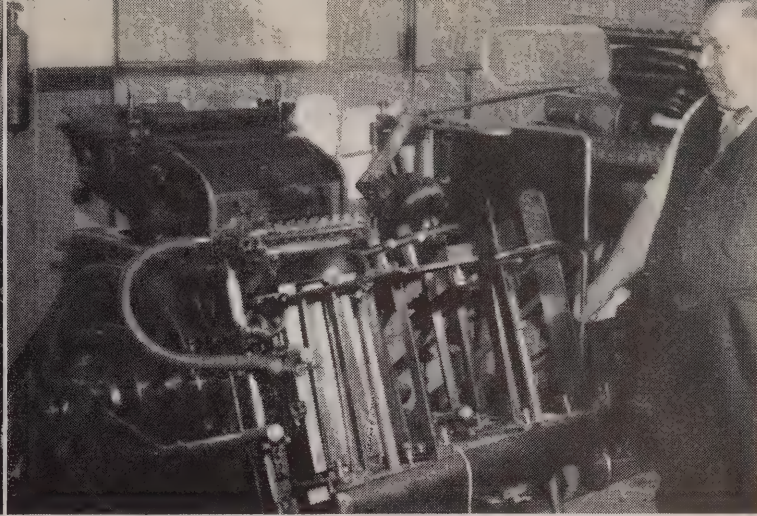


GLEN DUKE is shown washing a blue print. Hundreds of blue prints are made every year for the planning, construction and engineering departments of The Hydro Electric Power Commission of Ontario.

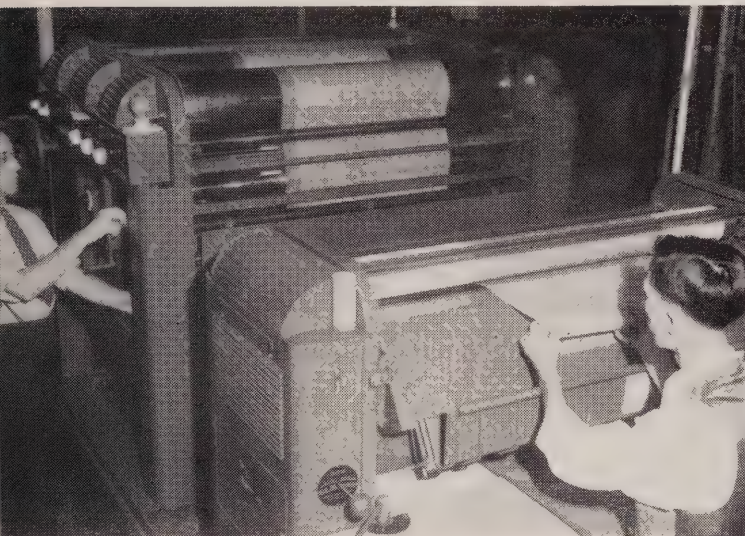




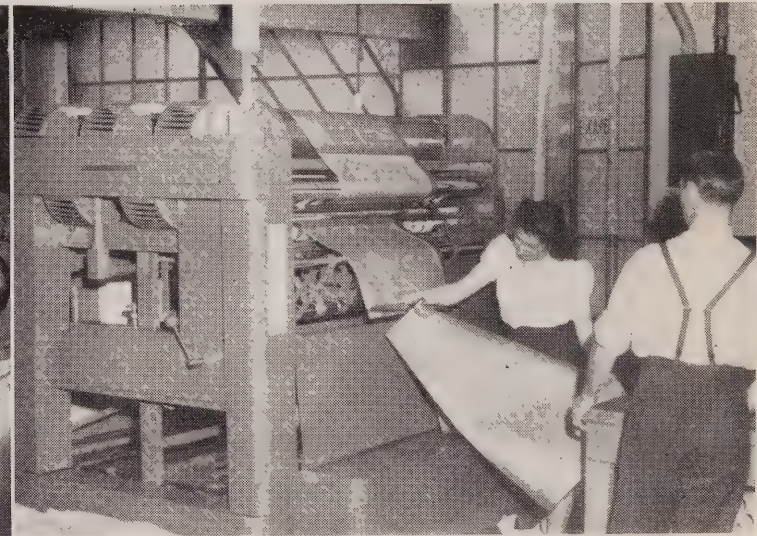
AT the composing tables are Morley Stephenson, locking up, and Jack. While printing technique has been improved, fundamental jobs remain the same.



THE HEIDELBERG press has a wide range of usefulness. One of its jobs is the printing of Hydro bills. It has a capacity of 4,000 sheets an hour. The operator is Fred Crowhurst.



WIDE OF the Hydro printing shop is the new Pease blue-printing machine. It is equipped with devices for both speed and maximum efficiency. Ian Black is feeding and Glen Duke adjusting.



AT THE delivery end of the blue-printing machine are Rosemary Daley and Glen Duke. When the machine is speeded up, Rosemary has to be quick at inspection job.

CHECKING STATIONERY are Marian Rice and Stanley Johnston.—At the right, one of the bunks, Nick Mele (bottom) and Joe Statton (top) are engaged in filling orders.



FRANK REID is adjusting the lens on the photostat machine. Precision efficiency in operation is secured by close attention to details on the part of operators.





IN THE dark room of the photographic section Alf Piper is developing a print. Thousands of "record" photographs have been taken of Hydro developments.



IN CHARGE of the photographic section is H. M. Jackes. Like most ardent fishermen, he smokes a pipe. Here, he is seen at the copying camera.

(Continued from page 15)

astonishment as the refreshment was prepared. He accepted the steaming cup that Miss Graydon brought over to him with some hesitation, but he was soon smacking his lips with delight.

"This is a good drink—a very good drink," he murmured, gratefully.

"Tea is as good a pick-me-up as I know," assented Fierheller. "And with Hydro, all you have to do is to plug in a wire or turn a switch, and there you are. No smoke, no smell, no fussing."

"It's wonderful!" applauded the visitor.

"He leaned forward in his chair. He was sniffing the air. Suddenly he jumped to his feet."

"This is a printing shop!" he shouted. "I can smell the ink."

Fierheller was amused. It was a good act. Still . . .

"Are you a printer, then, yourself, in civvy life?" he asked curiously. "Is that why you came to think about parading as Caxton, about wearing that costume for the dance?"

The Father Of Printing

"I am William Caxton," pronounced the visitor earnestly, sitting down again. "I am the founder of English printing. I wanted to see what developments had taken place since my own time nearly five hundred years ago. Everything was still so disturbed in Europe that I decided to drop down here."

The superintendent subjected the stranger to a closer scrutiny, and as he studied him the conviction grew that this stranger, who had fallen so unexpectedly among them, was indeed the man he claimed himself to be—Caxton, the father of English printing, who had set up the first letter-

press in England just after the War of the Roses, in the reign of Edward the Fourth.

The man wore his quaint clothes not as if he had donned them merely for an occasion, but as though he were accustomed to their fit and feeling. The buttoned jerkin, the sur-coat with its rolled-back sleeves, the long hose that fitted as snugly as a girl's stockings, the shoes with their snout-like toes were all worn with the ease and grace of long habit. And the liripipes or tippets dangling from the turban-shaped hood, although they flopped around a bit in the draught from the open window, apparently occasioned the visitor no particular inconvenience.

A shout came from the employees out in the shop.

"We want Caxton. We want Caxton!"

Vox populi, vox veritatis—the voice of the people is the voice of truth—Fierheller paraphrased. Yes, this was indeed Caxton.

The visitor squirmed in his chair. His nostrils dilated. He was sniffing the air again. He wanted to be out there in the shop where printing was going on.

"This is not a commercial printing shop," exclaimed Fierheller, "It is just a comparatively small department of The Hydro-Electric Power Commission of Ontario. The business of the Commission is to develop electricity for the use of our citizens from the water power of the province. This, of course, entails a large staff of engineers and designers. Their plans must be copied and blueprinted. Naturally, too, there is quite an amount of varied and particularized job printing associated with a great public service enterprise such as ours. This, from the point of view of both direction and economy calls for our own printing plant. But we are not commercial in any sense of the word . . . However, now you are here . . ."

They were shouting again outside.

"We want Caxton! We want Caxton!"

As the superintendent came out with his guest, the

employees, anticipating a tour of the shop, returned to their respective tasks.

Methods Of Printing

Fierheller led his guest to the composing tables in the corner. This was a good place to begin. There would be less shock to his visitor's fifteenth century anatomy.

"By Saint George," cried Caxton, "it's the same as my own letter-press, only my letter blocks were of wood and these are of metal."

"That's true," admitted the superintendent, deferentially. "You and Johann Gutenberg of Mentz and Laurens Coster of Haarlem were the fellows who got to the big idea of printing on paper, using movable type; and letterpress, as you conceived it, is the method of printing most in use even today. Of course, the presses used nowadays are much bigger and infinitely faster than those of your time, and our big commercial plants have introduced all sorts of mechanical devices to achieve, if I may be permitted to say so, a much smoother-looking job. But the fundamental idea remains the same."

The superintendent was going on to tell Caxton about other methods of printing known as lithography and intaglio, when the visitor looked up.

"In the name of Beelzebub," he exclaimed, "what devilry proceedeth yonder?"

Fierheller laid his hand on the visitor's sleeve.

"Take it easy, your honour. Those are just two fast register presses called Vertical Miehle. They operate automatically."

"Are the machines then living creatures?" demanded Caxton, "some new kind of anthropopagi brought from strange and recently discovered lands?" He brushed his sleeve across his eyes. "Ah, now I understand," he said, with quickening intuition. "They are worked by the wonderful power of electricity. They told me something about it before I came."

"That's it," smiled the superintendent. "It's what we call Hydro—that is electricity derived from water power. Nearly all our industries use it."

They walked over to the presses, and Fierheller explained their operations in greater detail. They were just the thing for job printing in a shop like Hydro's, he pointed out—compact in design with a good delivery range.

Hydro For Everybody

"With diversified work from our different departments coming in all the time," the superintendent remarked, "these presses are kept quite busy." He pointed to another machine, "That is another automatic press we call the 'Heidelberg.' It is used on the forms for rural bills and meter-reading post-cards. You see, there are a great many consumers of Hydro power throughout the country districts."

"Caxton's bushy eyebrows tilted in surprise.

"How can plain folk like farmers afford to use a power like Hydro?" he asked. "I should imagine it could be employed only by kings and princes, and by them only through taxing their subjects to the uttermost farthing."

Fierheller smiled.

"As a matter of fact, Hydro is so cheap for the services it provides that anyone who can use it and doesn't is just a numbskull . . . Haven't you read the Hydro motto: *Dona Naturae Pro Populo Sunt?*"

"It skills not to conjecture," murmured Caxton. "Might I ask if all this material is blown out of the shop

by some powerful Hydro device and dropped like a shower of snow-flakes upon your customers?"

"Let the bills fall where they may," laughed Fierheller. "No. We have not yet reached that degree of mechanical perfection. Everything is dispatched through His Majesty's mails."

Photostat Work

They walked on to the photostat room.

The photostat, Fierheller explained, was a combined camera and stand with semi-automatic mechanism for the reproduction of various kinds of charts and documents. Any scale of enlargement or reduction could be adapted, and copies could be developed and fixed in a few seconds. A very rapid colour-sensitive paper was used which made the method invaluable for copying engineers' and architects' plans.

"We purchased this machine in 1937," the superintendent stated. "It will handle a 350-foot roll of sensitized paper. The positives required can be re-photographed in the same camera."

Once he had settled down, Caxton had shown such a ready perception, such a quick-pick-up on all the details of modern printing that Fierheller felt he was now ready to see the rather complicated blue-printing machine which was such a necessary adjunct of the engineering departments.

Blue-Printing Processes

He opened the door of a room off the printing-shop and bowed his visitor in.

"This," he announced, "is our new blue-printing mach-



INSPECTING A negative in the photographic section is T. K. Allen, assistant superintendent of the Hydro printing shop. Calls for photographs are continuous.



"WHY NOT send him a radiogramme?" was the suggestion made by H. P. Fierheller's secretary, Marjory Graydon, after Caxton's departure. "Fine," pronounced the superintendent. Audrey Callan of the office staff has her pencil and paper ready but Helen Wilcox is a bit doubtful.

ine. We make all the prints of our engineering department's tracings with it. It is equipped with the horizontal mercury-quartz tube, which ensures perfectly even lighting.

"Our old machine over there was fitted with five carbon lamps which were subject to fluctuation and caused uneven values. And the difference in speed! That old fellow moped along at a rate of four feet a minute. This new streamliner will travel along at thirty, although we have to keep it down to from twelve to fifteen feet a minute because of the different sized tracings we put through."

The operator was threading in a leader.

"Methinks the idea breaketh slowly through my ancient pate," smiled Caxton. "Yon tracings are imposed upon paper treated with chemicals and the light driveth the impression through."

"You've got the basic idea, all right," returned Fierheller, "but this particular machine is equipped with all kinds of devices to secure the best results. Come over here."

He showed his guest how spray-washing was done at several points as the prints travelled on their way. The

prints were dried over electrically-heated eight-inch drums. There were five of these arranged in series so that the last two calendered the paper, ensuring perfectly flat prints. An automatic threader drew the paper over and under the drums so that there was no possibility of the operator burning his hands, and an even tension on the paper was maintained by an ingenious heavy roller which rode up and down on a chain, taking up any slack. By this means, also, excess water was carefully squeezed off both sides of the paper before it contacted the drying rollers.

At the tail of the machine a girl was busy with a pair of shears cutting off the prints as they came through.

"We still use the old machine for small jobs and what we call 'rush singles,' the superintendent explained. "The prints are taken direct from the printing lamps to the hand washing tanks. They are given a water wash, then a bichromate, then another water wash, and are dried over an electrically-heated drum."

The blue print room was also equipped with an Ozalid

(Continued on page 30)

STRIKE SCORES SNIPING BY OPPONENTS OF HYDRO

**Says Commission Will Continue To Carry Out Its Original Policies Despite
Opposition Of Antagonistic Interests—Addresses Kiwanis Club
Meeting Marking 35th Anniversary Of St. Thomas
As Member Of The Hydro Family**

THAT the Hydro-Electric Power Commission of Ontario was created to serve the interests of the people by developing the water power resources of the province and by increasing its electrical services to meet their needs, and that the Commission would continue to carry out its policies on this basis in spite of any opposition from antagonistic interests was emphasized by Hydro Commissioner W. Ross Strike in a vigorous address before the Kiwanis Club at St. Thomas on February 25. The occasion was a "Hydro Day" meeting, marking the thirty-fifth anniversary of the entry of this progressive city into the Hydro family among whom it now wears the distinctive badge of veteran service.



W. Ross Strike

It was a good thing for Ontario, Mr. Strike pointed out, that, during its infancy, Hydro was under the guardianship of such men as the late Sir Adam Beck and his associates. No sooner had the Commission been created, he continued, than there was an attempt to frustrate its initial activities and even to set aside the Power Commission Act by which it had been established by the government. All sorts of legal difficulties had been suggested by opponents of Hydro and a campaign of propaganda was carried on in the municipalities which were preparing to sign Hydro contracts. On the 4th of May, 1908, out of 15 municipalities which had expressed a desire to co-operate, all but two had been temporarily dissuaded. These two were Toronto and St. Thomas.

Hydro Achievements Arouse Antagonism

Efforts to cloud the public mind about Hydro, declared Mr. Strike, had not been confined to those early days of the Commission's growth. Jealousy over Hydro's achievements, which had placed it on a par with the greatest enterprises of its kind in the world, had awakened antagonism that had often been veiled in covert language, misrepresentations and innuendo.

Referring to an alleged source of hostile propaganda current at the present time, Mr. Strike said:

"These publicity experts do a nice job both in getting publicity and covering up. They are in the employ of private power companies, and a lot of their sniping is

done by means of news items and short editorials sent to the editors of weekly and daily newspapers across Ontario."

The Commission, the speaker was quick to add, had no quarrel with honest and constructive criticism. It was bound to make mistakes, and it was quite ready to consider proposals to remedy them.

Referring to St. Thomas and its happy Hydro anniversary, Mr. Strike recalled that in its original application to the Commission only 1,500 horsepower had been called for and the combined applications of the fifteen municipalities, which, of course, ultimately all came in, amounted to only 30,000 horsepower. The plants at Niagara at that time had a capacity of 60,000 horsepower under contract with the Commission and a total available capacity of only 100,000 horsepower. Now St. Thomas alone was using close to 10,000 horsepower, with substantial increases in the offing.

"At this moment," declared Mr. Strike, "Ontario is consuming about 2,500,000 horsepower. Of this amount 1,760,000 horsepower comes from our own generators and the balance is purchased from other sources. Of the municipalities using Hydro no less than 109 have no debenture debts; while a value of \$100,000,000 in plant is shared by 304 municipalities."

Men Of Clear Vision

The whole story of Hydro from its inception, said the speaker, was one of boldness of conception and fearlessness in execution. Its founders had been men of clear, unselfish vision who conceived of the natural waterpower resources of their province as belonging to the people. Hydro had been able to carry out its many undertakings through the good will and co-operation of the communities it served. No other scheme could possibly have welded the province into the efficient network of electrical generation and distribution that we had today and at such low cost to the consumers.

"And Hydro," concluded Mr. Strike, "can only continue to grow and develop by the support and assistance of the municipalities and through them, of the people of Ontario. Its chief bulwark is the calibre and integrity of the men who sit on our local utility commissions, and as long as these men give freely of their time and energy in maintaining the fundamental principles of Hydro, there should be no fear of the future."

DOWN THROUGH THE YEARS



MEET HERBERT C. POWELL, statistician of the Toronto Hydro-Electric System, whose archives of electrical history are reputed to be among the most extensive to be found anywhere. In addition to astronomy and Bible class activities, one of Mr. Powell's principal spare-time interests has been vocational guidance work. He is shown above in his office at the Toronto Hydro-Electric System where he has served since 1910.

ELECTRICAL HISTORY—PART I

By Herbert C. Powell

Toronto Hydro-Electric System

THE story of electricity begins with the year 1600 when a demonstration of electricity and magnetism was given to Queen Elizabeth and some guests by Dr. William Gilbert, her physician. He rubbed amber which exhibited a power that he called "electrica", now known as static electricity. He used the rubbing process on glass and other solids to produce this same power. He also demonstrated that our earth is a huge magnet with magnetic north and south poles which attract or repel a magnetic needle. He used a ball-shaped magnetic rock called lodestone to deflect needles in a manner similar to the deflection to our earth.

It does not seem possible that thousands of years should pass from the beginning of human history without anyone making a public demonstration of electricity, until Gilbert's experiments in 1600 A.D. Even by 1876 only the most elementary pieces of electrical apparatus were on exhibition, telegraph, telephone, electric batteries, electric generator, electroplating, electric arc lamp. In the 24

years from 1876 to 1900, considerable electrical progress had been made; but the development from 1900 to 1946 has been beyond all expectations.

Before proceeding with this series of highlights of electrical history may we offer some suggestions to boys and girls, parents and teachers. The safe and proper uses of electricity should be taught as early as a child forms ideas, and continued through school years. Every father should make a pal of his boy, and help in every possible way, in school projects and homework, in handcraft training, in study and experimenting in electricity and other scientific subjects. However, Mother is the real coach and inspiration for boys and girls to do their very best. Every boy and girl should try to choose a career in a general way by 12 years of age and to choose school courses and spare time activities that will assist in preparation for that career.

Achieved Apparently Impossible Results

An example of a boy prepared by his mother at home is Thomas A. Edison, the well-known electrical pioneer. Born in 1847 in Milan, Ohio, he started to work at 10 years of age, and devoted all his spare time, energy and de-

termination, 16 or more hours a day, for 74 years till he died in 1931, the most outstanding electrical man in history, with over 1,100 inventions in his name. His mother, a former school teacher, gave him such an educational foundation of efficient learning, experimenting and record-keeping that he was far in advance of his age. He solved problems and achieved apparently impossible results even before the age of 12. He did not take time to go to high school or college, but studies and experimented all the time, far more than any formal education could give.

Some of Edison's methods may well be acquired by anyone who hopes to succeed in any career.

1. He observed human needs and things which should be either improved or superseded by something better. He had a passion to improve.

2. He read all literature he could find on matters relating to every part of any problem, constantly searching for ideas and facts. He had a burning desire to know.

3. He concentrated his entire mind, inventive capacity and constructive experience on each problem. He made plans, models, experiments. He forced himself with

great energy, dogged perseverance, to succeed in spite of failures.

4. He made notes and sketches in notebooks of similar size; he recorded all known facts; every idea, effect, discovery; everything in small detail; all unknown things waiting for discovery. Everything was timed, dated, titled.

Four-Step Plan

Make yourself an expert in some branch of electricity. You are never too old to learn. Use efficient methods of learning, recording, and remembering. The following plan has been successful, consisting of four steps:

1. Choose wisely and carefully what you desire to achieve.

2. Make a hobby of daily clipping and filing. Read advertisements and articles in newspapers and magazines. Either make notes or clip the articles. File them promptly in subject folders or envelopes about $9\frac{1}{2}$ " x $11\frac{3}{4}$ ", using suitable boxes to store them neatly.

3. Visit the library regularly; borrow good books;



Lady Scudamore
and Ladies of the Court

Sir Walter Raleigh
Queen Elizabeth

Sir Francis Drake (Portrait of Gilbert)
William Gilbert, M.D. (1544-1603)

Cecil, Lord Burleigh

(Photograph courtesy A.I.E.E.)

"GOOD QUEEN BESS" showed foresight and a modern appreciation of research when she pensioned off her own physician, Dr. William Gilbert, to allow him full time for experimenting with his hobby, amber. He made important discoveries in connection with the early study of electricity and was the first to adopt the word "electrics" (Greek for amber). This picture shows Dr. Gilbert explaining amber's mysterious power to the Queen and her court.

make notes from every book, and file them in your filing system.

4. Make yourself best in your specialty by devoting every spare minute in study, experiment and improvement. Make a timetable of things to do. Drive yourself to keep on time in all you do.

For 200 years, 1600 to 1800, many talented men were experimenting with electricity and magnetism. But there was little practical success until Volta in 1799 discovered the principle of the electric battery. Guericke of Germany about 1647 made a device to show that there was a repulsive as well as an attractive force in electricity. Sir Isaac Newton in 1675 made some electrical discoveries. Hawksbee in 1709 made discoveries, and by 1733 had stated the principle that electrified bodies attract those that are not electrified and repelled them as soon as they became electrified. Drawing sparks from the human body was an interesting entertainment about this time. Storing electricity in a wide-mouthed jar covered inside and out with tin foil produced violent electric discharges. This became the first type of electric condenser in 1745 and was called "Leyden Jar".

Static electric machines and Leyden jars provided the electrical energy for many future discoveries. Benjamin Franklin of Philadelphia discovered lightning to be similar to the electricity produced in Leyden jar experiments, and he set out to prove it. He succeeded in his kite experiments about 1750 in getting electric sparks from the string during a lightning storm. Another man killed himself doing the same experiment. Franklin invented the lightning rod to prevent buildings being destroyed by lightning. Cavendish of England, from 1771 to 1781, made important discoveries, such as electric conductivity of metals, electric capacity, electric potential, degree of electrification, laws of division of electric current, the law that current varies in direct proportion to electromotive force. He also observed animal electricity.

About 1785 Coulomb of France invented an electrical measuring instrument called torsion balance. He also discovered several electrical laws. In 1786 Galvani of Italy demonstrated animal electricity by experiments with frogs. Volta of Italy made his great discovery in 1799, of a continuous current of electricity by means of chemical action using alternate disks of copper and zinc separated by cloth saturated with a dilute acid. This was the beginning of electric batteries which became the source of electrical energy for many other electric inventions and discoveries.

No one seems to know what electricity is. Though a number of definitions and theories have been suggested since the year 1600, yet up to the present there seems to be no satisfactory explanation. It is well known now that electricity is in everything—atmosphere, gases, liquids, solids, human life, animal life, vegetation, chemicals, light, heat, power, sound, rays, waves, astronomic bodies and movements, etc. Electricity, magnetism, light, chemistry and all branches of science seem to be all so closely related that there is no boundary line where one leaves off and the other begins.

Electricity in many forms comes into the life of every person today, even in the most remote places. Radio reaches everywhere. The gasoline engine, which can be used anywhere on this earth, cannot operate without battery, generator, induction coil, etc. Flashlights can be

PROMINENT FIGURE PASSES



JOSEPH GIBBONS

former chairman of The Toronto Hydro-Electric System, who passed away on February 17 following ten days' illness. (See story on *Around The Hydro Circuit* page.)

used by youngest and oldest in perfect safety. Telegraph messages cover the earth. Telephones can be interconnected between extremely long distances. Electric light, heat and power are available to a growing number of homes, farms, institutions, factories, shops, offices, railways, elevators, outdoor lighting installations, construction works, mines and many other applications. Airplanes are entirely dependent upon many electrical applications. The navy and merchant marine ships contain most elaborate electrical equipments. Electrical uses in dentistry, medicine and hospitals are growing fast.

Those in the electrical occupations may specialize in over 60 main branches of electrical engineering, each branch requiring a lifetime of study. The history of each branch would require a large volume to hold it. New ideas and developments are coming so rapidly that it is extremely difficult even for the experts to keep up with them. But it is surprising how much can be accomplished even with a few minutes every day following a definite plan and timetable of study. Five minutes a day for five years will make you a specialist. Opportunity is preparedness; when you are prepared your opportunity will be ready waiting for you. There are many in the great Hydro family who should be studying but are not. Begin now; it is so easy to rise above the average.

This series of Electrical History will be continued in the next issue. Part 2 will present some of the discoveries after the year 1800.



WELL, March is here. Usually, it's lenten season, just as it is now. One peculiar thing about meals at this time of year is that folks select fish for lunch and when they see mother has fish for dinner at night, they are "mad as a March hare."

There's actually no reason for this. We could ask what the main course is going to be; on the other hand, homemakers could vary the method of preparing this prominent lenten food. In spite of the scarcity of canned fish, there is plenty of fresh or frozen fish. Our butchers do a fine job of preparing fish ready for cooking and we have numerous ways of serving them.

Frozen Fish And Kinds Of Fish

Frozen Fish: Quickly frozen fish is common in many shops. The freezing process preserves the fresh flavour and facilitates shipping and handling. When cooking frozen fish, the best results are obtained when it is allowed to thaw just sufficiently for cutting. It may also be thawed gradually in a cold temperature, preferably the lower part of the electric refrigerator, in a covered casserole. If fish is thawed out at room temperature, it should be cooked at once. Allow a longer period for cooking frozen fish—about eight minutes longer to poach four servings.

Kinds of Fish: Before we discuss ways of preparing fish, may we remind you that it is important to review the fish that are fat and the fish that are naturally lean, especially in days when the diet is low in fat. The common fish containing oils are herring, mackerel, salmon, smelts, whitefish, mullet and haddock. Lean fish are: bass, bluefish, cod, flounder, halibut, perch, pickerel, lake trout, catfish and red snapper. Oily fish are best for baking; dry fish such as haddock, cod, etc., require basting and extra oil or baking fat to prevent skins from bursting.

Methods Of Cooking Fish

Baking whole fish: Split the trimmed fish down the backbone so that the fish will lie flat. Place in oiled baking pan, skin side down. Sprinkle with salt. Cover with finely prepared bread crumbs, sprinkle with milk. Bake in an electric oven of 425 degrees for 15 to 30 minutes, according to the size of the fish.

A 3-pound fish requires 15 to 30 minutes and a 6-pound

fish 25 to 30 minutes. If the fish becomes too brown before cooking period is up, reduce the heat.

Baked whole stuffed fish: Fish for stuffing should weigh 3 to 5 pounds. Clean, scale and remove the head and tail if desired. Sprinkle with salt inside and out. Stuff and sew. Place in an oiled pan and bake in an electric oven at 400 degrees for 12 minutes, then reduce heat and bake 30 to 40 minutes according to the thickness of fish. Allow 10 minutes for each pound up to 4 pounds . . . 5 minutes for each additional pound.

Sautéed or pan-fried fish: This is a quick method of cooking fish. Small or medium fish are best for sautéing; large fish should be cut into pieces for serving. Roll in salted flour, cornmeal, or fine crumbs. Use enough cooking fat to completely cover the surface of the pan. Butter tends to burn too quickly, use mixture of fats. Heat oil until hot but not smoking hot, brown fish on one side, turn and brown on the other. Fish is cooked when easily pierced with a fork.

Fried Fish (deep fat): This method requires a pan one-third full of oil; therefore only inquiries will be answered re this dish.

Boiled Fish: Whole fish or large may be boiled, but it is more satisfactory to cut into servings. Dried or lean-meat fish are best for boiling. Servings are put on a pie plate and placed in a saucepan over which is poured one quart of water containing 3 tablespoons vinegar, 2 teaspoons salt. (A quart of bouillon is a good substitute for vinegar solution.) Fish is boiled for 5 minutes, then simmered for 6 to 10 minutes depending on the thickness. The liquid is used for making sauce—thicken and season with onion, parsley, mushroom, chopped egg, cheese, tomato or spices such as capers.

Steamed Fish: Pieces of dry-meated fish are cooked tender in a steamer, allowing 10 to 15 minutes per pound. Sauce is the finishing touch to this fish dish, too.

Fish Leftovers

Fish is often cooked to concoct into entrées such as Fish Cakes, Fish Timbales, Fish A La King, Fish Croquettes, Fish A La Mornay, Fish Cutlets, Fish Loaf, Fish

(Continued on page 33)



UXBRIDGE, founded by Quakers, or The Society of Friends, who saw the possibilities of the area for lumbering and agriculture, is located on the Canadian National Railways, slightly over 40 miles north-east of Toronto on the Black River.

"The Friendly Town," as it is known, joined the Hydro family in 1922. The load at that time was only 75 horsepower and today it is approximately 500 horsepower. Other facts obtained by Hydro News show that the same office and staff serve both as a rural centre with 1,899 consumers and also as a municipal centre with 447 Hydro users.

When the town voted to have Hydro, the original commissioners were W. C. Shier, who was chairman, A. M. MacPhail, commissioner, and mayor J. W. Gould. The Hydro debentures were paid off in 1935, and the town itself has always been in good financial standing.

Working for both the R.P.D. and the Commission are Norman Belfry, who took over duties there in 1936, A. W. St. John, who has been with Hydro since 1937 and acts as secretary, and Maxine Parish, who helps out with the general office routine.

Main Street, where the Hydro office is located, is a wide open thoroughfare with brick and stone buildings which create an impression that the town, like its buildings, is sturdy, solid and permanent.

Immediately across the street from the Hydro office is the post office building, where the town clock is located. Farther down the street is the branch office of the Canadian Bank of Commerce, which faces the town's hotel, the Mansion House.

Architecturally, this hotel fascinated Hydro News. Built by Joseph Gould, who was a pioneer and one-time Member of Parliament, this hotel is so constructed that all the bedroom windows look in towards a "well" which reaches from the hall on the ground floor to the roof. The principle the builder had in mind was that guests could open their bedroom windows and thus permit the heat from a stove in the hall to warm their rooms.

Mr. Gould also willed to the town a fund with which to build the library, which was originally called the Mechanics Institute.

The Foster mausoleum, resting place of the late Thomas Foster, one-time mayor of Toronto, who spent his boyhood in Uxbridge, is located about three miles north of the town. Built of massive granite and bearing a similarity to the famous Taj Mahal in India, it is said to be beautifully tiled inside and is reputed to have cost many thousands of dollars.

At the present time, one of the principal industries is The Beaver Lamb and Shearling Co., which supplies cropped, dyed hides for such purposes as coats, linings and trim. Most of the skins used in this process are imported from South Africa, South America and Australia.

Founded on the Rochelle Co-operative principles, with 48 shareholders and over a thousand sharing customers, The Uxbridge Farmers' Co-operative Co. Ltd., plays an active role in the business life of the community in such things as grinding grain and selling hardware, feed, fertilizer, shingles, wire and grain.

Not so many years ago, Uxbridge had a furniture factory, piano factory and a woollen mill, but, due to a series

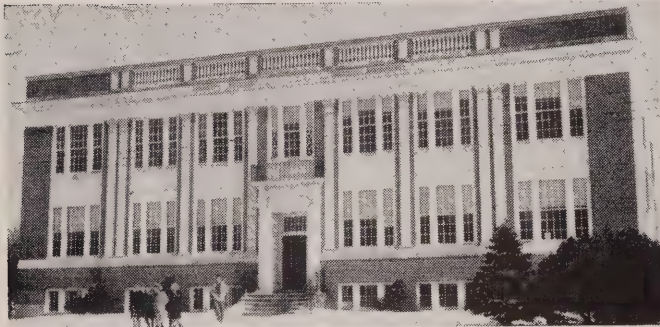
(Continued on page 32)



JOHN STEMP, the town pumpman, points out the control valves to Hydro superintendent Norman Belfry in the building that houses the electrical mechanism which supplies Uxbridge with its famous artesian well water.



WHEN THE temperature gets down around twenty below, the linemen at Uxbridge figure that it is a good day to practise artificial respiration. Here, Ross Harrison acts as victim while Irvin Merrick works on him with foreman Harold Clarke.



SCHOOL CHILDREN in and around Uxbridge have every reason to be proud of their school which is as modern and attractive as any city school.



THOMAS FOSTER, one time mayor of Toronto, who spent his boyhood in Uxbridge, was laid to rest in his mausoleum (above) which is located about three miles north of Uxbridge.



WHEN SIDEROADS get plugged with snow, farmers rely on "Dobbin" to keep transportation rolling into town. Hydro News took this picture at the Co-operative Grain Mills.



SHEEP HIDES, imported from different parts of the world, are well washed in over-sized, barrel-type washing machines at The Beaver Lamb and Shearling Company at Uxbridge.

Lighter Lines



"Congratulations! We won!"

Troops recently engaged in Belgium are said to have come across a curious memorial of the First World War. In a corner of a field they found a stone with the following inscription: "Here lies Sophie—army mule. Kicked 44 officers and 529 other ranks—and one bomb."

From Wales comes a story by a Canadian correspondent who describes the fine view he obtained from a hill "only 580 miles above sea level". This, however, is nothing to the panorama that will greet his enraptured vision when he gets to the top of Snowdon. He will find the ancient bards up there harping celestial music.



"Got a pencil on you, Bud?"

IS SHE HAPPY!

*A new song is on my lips;
I'm blithe as a bird in May.
I'm sweet as the nectar a goddess sips;
I'm wearing Nylons today!*

A Toronto real estate firm has advertised a home with a "loving room" 17 feet by 11. This is a start in the right direction, but if we are ever going to have permanent peace on the earth, we shall require a "loving room" some 24,000 miles in circumference.



DOWNWORD PUZZLE

LAST MONTH'S SOLUTION

1	2	3	4	5	6	7	8	9	10	11	12	13
V	I	C	T	O	R	I	A	F	A	L	L	S
E	P	E	S	E	V	N	A	G	I	O	A	
R	P	C	E	T	T	O	T	W	R	V	A	M
T	O	I	T	R	I	N	I	N	I	N	U	
I	P	L	S	I	C	Y	Q	C	C	N	D	E
G	O	R	E	C	U	H	V	O	U	G	A	L
I	T	H	F	L	U	A	L	L	S	R	B	
N	A	O	L	E	A	N	R	O	T	T	I	A
O	M	D	I	G	T	T	I	R	U	O	V	K
V	U	E	E	G	E	E	A	E	R	N	E	E
S	S	S	S	S	D	R	N	D	E	E	R	R

An Irish policeman was escorting a prisoner to the station when a gust of wind blew the man's hat off.

"Let me get it," the prisoner pleaded. "It's the only one I've got." "Sure and begorra, I'll be doing no such thing," said the constable. "It's running away you'll be. You stay here. I'll be after getting it for ye."

The lady came back to the delicatessen store and addressed the grocery clerk in acid tones.

"Remember that cheese you sold me yesterday?"

"Yes, madam."

"Well, you made a mistake about it. It wasn't imported from Switzerland. It was deported."

Counsel for the defendant in a man and wife dispute over property had one more question to ask in cross-examination.

"You say your husband had you so terrorized that you couldn't talk back to him. How did he achieve that result?"

Opposing counsel jumped to his feet.

"I object."

"Well," reflected the court, "you didn't bring it up in your examination of the plaintiff, but I think I shall allow your learned friend to proceed. I feel it is a matter in which we are all interested."



"But, I tell you, I'm not interested in a machine that will take the place of a secretary!"

#his and #hat

BY THE EDITOR

LIFE can be a great adventure with each day bringing new and interesting experiences. Some of these experiences are more pleasant and memorable than others. For instance, the other day, it was our privilege to have an interview with Herbert C. Powell, statistician of The Toronto Hydro-Electric System, who, undoubtedly, ranks among the most interesting personalities we have met.

Since joining the Toronto Hydro in 1910, Mr. Powell has established a reputation and rendered a type of public service which, in many respects, cannot be described as other than unique. He, himself, is not the type of man who seeks the limelight or any acclaim for the very far-reaching contribution he has made in helping mould and guide the lives of thousands of young people who have come to him for advice.

* * *

Vocational guidance has been one of Mr. Powell's primary interests in life. As far back as 1912, he devoted much of his spare time to boys' work at the Toronto Central Y.M.C.A. In the intervening years he has had, on an average, 125 teachers and 600 children come to him every year for advice on business practice, essay projects, general vocational guidance and other subjects. He has always taken a keen interest in character building and in Bible class activities and is the secretary-treasurer of the Bible class at Central Y.M.C.A.

Mr. Powell's spare time interests or hobbies, however, have extended far beyond these important fields of voluntary endeavour. He is believed to have the most complete collection of data on Toronto's industrial history and in 1934 when the city's centenary was observed he was called upon to organize an exhibit and compile data on the electrical history of Toronto. This he did alone and was able to

present a large, interesting and highly educational display in the old transportation building in the old fair grounds. He was called upon also to place the exhibit on display at the Canadian National Exhibition. As a result, Mr. Powell entered with still greater zeal into his hobby of building up what is today perhaps the finest archives of electrical history to be found anywhere.

* * *

Hydro News regards itself as being highly fortunate in having Mr. Powell consent to write a series of articles on this subject. The first of these articles, for which he draws upon his extensive collection of data and also upon his own intimate knowledge of the electrical field, is featured in this issue.

That's not the whole story about Mr. Powell by any means. In fact, it's very questionable if the entire story of all his many interests in life will ever be told in detail. In our interview with him we did learn a number of facts which, we feel, will be of interest to all Hydro folk. Mr. Powell, for example, is a very keen astronomer and has specialized in making a study of the sun spots and the history of these phenomena. He has carried on research work in association with Dr. Chant for the past fifteen years to ascertain if astronomical changes had any effect on business trends while he has also made a study of biological cycles.

* * *

Another of Mr. Powell's hobbies has been that of looking ahead for twenty years in business. In other words, he has successfully forecast business trends since 1907.

From these few facts about Mr. Powell it is not difficult to appreciate that his day to day life is well-ordered and full. We are looking forward with keen anticipation to the succeeding articles in the series which he is writing for Hydro News.

We have been advised by F. B. Pope that the twenty-fourth annual dance of the Ontario Hydro-Electric Club will be held on Friday, March 22, in the Concert Hall of the Royal York Hotel, Toronto. Music will be supplied by Percy Morgan and his orchestra, and type of dress is optional. Members of the dance committee are: F. B. Pope, chairman; Margaret Gahagan, Inez Bryantan, Betty Chanter, R. E. Taylor, W. U. Morris, and G. H. Taylor.

* * *

We rather liked the following piece which a colleague laid on our desk recently:

"Electricity does some queer things—
notably when it handles liquids:

It makes water flow uphill to the house. And then—

It turns cold water into hot water. And then—

It turns warm water into ice. And then—

It makes more water flow uphill to the pigs, chickens and milk cows. And then—

It pumps the milk downhill into milk cans. And then—

It separates the cream from the milk. And then—

It churns the cream to make butter. And then—

It cools the buttermilk to keep it. And then—

It warms the milk to pasteurize it. And then—

It cools the milk to keep it. And—
It does all these ten things while your back is turned!"

CAXTON DROPS IN

(Continued from page 20)

printer. Development here was effected by ammonia fumes on dry stock. This machine, the superintendent pointed out, was very useful where further plotting was required and no distortion from the original image could be permitted. Great developments were in store for this process, and new equipment was being devised which would give a true black-line print at high speed instead of the present purple-shade print which was produced very slowly.

"And now," decided Fierheller, when he had explained all these things, "we are going to take your picture."

They passed into another room where a man was busy making lantern slides.

"Mr. Caxton, this is Mr. Horace Jackes, our photographer."

"Sit down over there, please, Mr. Caxton," said Jackes, pleasantly.

Caxton sat down. He smoothed his beard and readjusted his lippipes, while the photographer wheeled his camera into position.

"It won't hurt?" queried Caxton, nervously.

"Not the way I do it," smiled Jackes, pressing the bulb.

The photographer showed the visitor around his studio. During the thirty years he had been with the Commission, Jackes had built up an invaluable record of Hydro development, constantly referred to by the hydraulic and construction departments and drawn upon by Hydro enterprises in all parts of the world.

Back in the office again, they sat down for a cigar. Talk came around to the late war, and Fierheller drew attention to the fact that fourteen men and one girl from his not very large staff had enlisted in the armed services. Altogether there had been more than 1,200 enlistments from Hydro in the armed services.

"Now, by King Richard, the lion-hearted," applauded Caxton, "that is in truth a fine showing."

He was turning a little green from the unaccustomed cigar, and while Fierheller's attention was momentarily diverted, he dropped it to the floor and ground it under his heel.

"Have you an hour-glass here?" he asked. "Methinks my time is up."

The superintendent looked at his watch. It was nearly half-past six.

Caxton jumped up.

"The parachute will be back on the roof, and it won't wait long."

The superintendent raced up to the roof with his guest. The parachute was there, all filled out and ready.

Caxton scrambled aboard.

"Good-bye!" shouted Fierheller. "I'll be seeing you again."

"I hope so—some time," Caxton shouted back. "Watch your step down there. It pays."

The parachute shot up into the clouds. As it disappeared, a strident buzzing rang in the superintendent's ears. He jumped out of bed, and turned off the alarm. The hands of the clock on his dresser were at seven o'clock.

He looked out of the window and up at the sky, half expectantly. . . . But it was going to be just another day.

WHEN DAY IS DONE

(Continued from page 18)

come a very real menace. It might be said here that motor cars brought a revival of the old "carry your own light" practice from early days, only instead of a torch it was two headlights and a tail-light.

Pendant Type Lamps Introduced

Starting with the carbon arc lamp, both equipment and practices in street lighting have undergone revolutionary changes. In early days an upright luminaire was enclosed in a glass globe and canopy. More attention was given to appearance than to control of light. Approximately fifteen per cent of the light was completely wasted. Gradually pendant type lamps were introduced with reflectors which permitted scientific design.

Street lighting today is faced with a real problem because it has not kept up with the traffic needs. As a proof of this one need only read the statistics of street accidents and observe that, although night traffic is about one third that of daylight hours, more than sixty per cent of traffic accidents occur after dark. The hazards of night



THIS RESIDENTIAL area has a double row of lights down its parkway, achieving both an ornamental effect and an adequate amount of light for traffic.

driving are approximately three times greater than those of daytime driving and usually the accidents are more tragic in their consequences. When wartime dim-out regulations became effective with their attendant curtailment of illumination, traffic accidents increased despite the fact that there was a decrease in the number of cars on the road, adding credence to the relationship of lighting to safety. Experience has also proven that the replacement of an inadequate method of lighting by a more modern system results in a marked decrease in traffic accidents at night.

In general, most present lighting systems are inadequate

(Continued on page 32)

[illegible]

SOUTHERN ONTARIO SYSTEM . . .	2,127,492	2,096,387	+ 1.5
THUNDER BAY SYSTEM	139,410	130,027	+ 7.2
NORTHERN ONTARIO PROPERTIES	<u>287,999</u>	<u>261,004</u>	+ 10.3
TOTAL	2,554,901	2,487,418	+ 2.7



UXBRIDGE HYDRO commissioners were caught by the camera as they paused to chat while on their way home for lunch. From left to right they are: C. A. Nevison, Andrew M. MacPhail and Mayor A. G. Tipper.



SUPERINTENDENT NORMAN A. Belfry pauses at the desk of A. W. (Ted) St. John, who is secretary-treasurer at Uxbridge, while Maxine Parish, their girl "Friday" looks up, long enough to get her picture taken.

(Continued from page 26)

of disastrous fires, these were wiped out and, as yet, have not been replaced. There are several privately-owned grist mills and a creamery which serve the rural area of the town.

On one of the side streets in the east end, a modern High School of semi-Georgian construction serves the children as a continuation school for many miles around, and symbolizes the emphasis that the "town fathers" have placed upon the importance of education.

Health authorities claim that the water in the artesian wells, where the town gets its supply, is as pure as any drinking water in the Province. These wells are always flowing and electric pumps, in a house near the source,

keep the town supplied, and auxiliary motors can also furnish enough water for the use of the fire brigade in any emergency.

With hills that are comparable to ski tracks in any part of the Laurentians, Uxbridge is planning to attract winter tourists to the town. The fishing in the near-at-hand streams attracts many visitors in the summer.

The many service organizations in the town, which made a noteworthy contribution to the war effort, have one objective in mind at the present time and that is to establish a hospital. Plans are being formulated now so that this aim can be fulfilled in a few years, and by that time the progressive people of Uxbridge hope to be in a position to plan the achievement of further objectives for their town.

WHEN DAY IS DONE

(Continued from page 30)

to ensure safety of motorists and pedestrians. Undoubtedly, as a result of scientific advancements made during the war and a probable trend toward major public developments, vast improvements may be expected.

The principal and more recently developed types of street lighting units successfully used in prewar installations include incandescent, sodium and mercury light sources. Each has its own advantages and limitations. Results of intensive research during the war can now be adapted to peacetime developments. Probable growth in motor vehicle traffic and a tendency towards higher speeds will make effective lighting of immediate importance.

All sorts of technical considerations will be given attention in future street lighting plans—width and character of street, density and speed of traffic, required intensity and distribution of light, elimination of glare, etc. Safety will be the major theme, aesthetic possibilities will not be ignored. Sodium lamps when modified will probably receive more general acceptance, they are appropriate for

special locations, bridges, railway crossings, underpasses, etc. The mercury lamp in combination with the incandescent, producing the effect of white light, will be used more extensively. Fluorescent lamps may be developed in a new form for street lighting and highway illumination although they have certain characteristics which, so far, have made them unsuitable for outdoor lighting.

Other light sources will be improved and put to practical use such as the mercury vapour capillary lamp (developed during the New York World's Fair 1939-1940).

With the introduction of these new light sources, and also plastics and metal alloys, the light units of the future will probably take on a new form, more harmonious and decorative rather than the usual cast iron pedestals inherited from the past and still in use.

Looking back on street lighting and its connection with history, it might be a fair statement to say that it has been, and remains today, a measure of social and industrial progress.

NORTH OF FIFTIETH PARALLEL

(Continued from page 9)

and these lonely outposts of Hydro in the heart of the bush is an assurance that this vital service will be maintained twenty-four hours a day and every day in the year with the greatest possible efficiency.

The next stop along the Uchi line was a ghost town—Uchi itself. It's a lonely community where the empty little houses seem to stand with bowed heads in quiet remembrance of happier days when the now-silent Uchi gold mine was the economic lifeblood of the community. With the shutters of its windows closed, the hotel squats as if dreaming of the past when lively spirits were abroad in its rooms.

There are still a few people at Uchi—nine in all when Hydro News was there—and they were talking about the possibility of the mine being reopened. The Hydro folk we met at Uchi are: George Kleinendorst, patrolman, his wife, who bakes delicious homemade bread. There was Lorne McKenna, another Hydro man, while Lee Parker, patrolman at Hailstone Lake, was also on hand when Hydro News arrived.

There's still another story to tell in closing—that of the visit to the Commission's Rat Rapids plant, whose single generating unit provides power which is transmitted through the Crow River transformer station over 27 circuit miles of 22,000-volt transmission lines.

The people at this little colony, like those at the Hydro colony at Ear Falls, are friendly, kindly and interesting. For instance, there is Mrs. Erickson—wife of First Operator Clarence Erickson—who was formerly a high school teacher in Manitoba and who started teaching in her little home in the colony three years ago. Her pupils are her own daughter, Marlene, aged 10, and Gloria, aged 7, the younger daughter of Mr. and Mrs. Joseph Campbell.

In addition to the Ericksons—and, by the way, there is an 18-month-old Erickson named Edwin—and the Campbells, Hydro News met Joseph Chenier, Ivan Sidor and Jim Lawson at Rat Rapids, a place which might be described as ruggedly picturesque but which presents difficulties to gardeners by reason of the large rocks which are encrusted in the ground. On the slopes near the plant, blueberries grow in the thousands and, needless to say, the women folk at this colony know how to use them to best advantage.

The stay with these delightful people was all too short, but plane schedules had to be maintained and so we were again whirring on our way. Before entraining for Toronto, Hydro News had the opportunity of visiting the Cameron Falls and Alexander Landing plants and of renewing acquaintance with the people there. These colonies were covered before in Hydro News, but we obtained some interesting pictures which will be featured in a future issue.

In closing a series such as this, Hydro News remembers many incidents and experiences associated not only with the important job which Hydro and Hydro folk are doing in helping build a great empire of the North, but of the people who are partners and pioneers in this great venture "North of the Fiftieth Parallel."

HYDRO HOME FORUM

(Continued from page 25)

Au Gratin, Creamed Fish, Fish Balls, and many others. These are particularly tasty ways to use leftover fish.

Take flounder, if it suits you. Poach the fillets in milk until tender. This is a quick act, five minutes. Drain off the milk and make a cream sauce; season with a blade of bay leaf taken from the whole mixed spice box; pour mixture over the fish placed on an oven-proof platter; sprinkle a few crumbs on top and brown under the top oven element.

Wrap very thick creamed fish in squares of biscuit dough, put in muffin pans, prick and bake. Serve with carrots and peas.

Because pink salmon is as nutritious as red salmon buy the whole fish and cut your own steaks. Broil them: Lay the slices of fish on a butter wrapper in a shallow pan. Dot with baking fat and season with salt, pepper and paprika. Place three inches below the pre-heated broiling element for 12 minutes.

One of our favourite moulded fish dishes is Tangy Aspic. It is flaked salmon with shredded cabbage in aspic made with one envelope of unflavoured gelatine, 1½ cups water, ¼ cup vinegar, ¼ cup sugar, 1½ tablespoons prepared mustard, 1 teaspoon celery seed, ½ teaspoon grated onion and add salt. The salmon and cabbage are added when the jelly is partially set. This is an attractive dish if moulded in a fish-shaped dish, garnish with balls of cottage cheese and chopped nuts.

By the way, feature cottage cheese as an entrée accompanied by baked potatoes and browned parsnips, as a plate during lent.

There are umpteen egg dishes: poached, scrambled, curried, fried, cooked-in-shell, stuffed eggs, eggs baked in gravy, eggs fried in deep batter, soufflés, omelets, fondues, and variations of these.

Dried beans and peas are protein foods. Thick soups seasoned with a small amount of onion and celery are a main dish for a hearty eater. Baked beans or peas are good. Our pioneers were grateful for boiled dried vegetables seasoned with a dash of cayenne.

Milk and cheese make a simple casserole the mainstay of any meal. If your oven does not keep a constant temperature, make a cream sauce of whole milk in preference to homogenized—this will prevent a curdled looking scallop.

Vegetables are in ample supply. It is easy to provide a vegetable plate of three varieties, but smothering each mound with butter just can't be done these days. Here's what you do: drain off the liquid from a can of beets, heat to boiling and stir in two tablespoons of flour mixed to a paste with water, add two tablespoons vinegar and three tablespoons brown sugar. . . . Canned peas are delicious heated to simmering point in the juice in which a bag containing a half-teaspoon whole spices has been steeped.

. . . In the water from a tin of cut beans we slice two to three thin pieces of orange. . . . Of course, cheese flavours any vegetable if it is melted (not cooked) on top of a pre-cooked casserole. . . . And concentrated cream soups are about the easiest way of enriching any lenten meal.



YOU CAN LIVE WITHOUT HYDRO *but..*

Can you remember when making toast meant holding bread over red hot coals? ... and wash day meant hours of rubbing on a board? ... and oil lamps had to be cleaned and trimmed every day? Lots of people do remember those days when it took hours of toil to perform tasks that can now be done electrically in a few minutes. In a comparatively short period of time they have seen electricity grow from a small beginning into one of the most important and beneficial services in the world to-day.

To bring the electrical way of living to more and more people, Hydro has harnessed Ontario's great water power resources to provide this Province with an abundant supply of low-cost electricity enjoyed by few places elsewhere in the world. This is largely because citizens of Ontario co-operated to organize and support Hydro, and have built it up

through steadily increased use of its service. Hydro is completely self-supporting. It operates on a service-at-cost basis, and the more it is used the less it costs.

Here is how Hydro rates have dropped with increased use:

Year	Average Annual domestic use	Average cost per kilowatt-hour
1914..	270 kilowatt-hours..	5¢
1924..	960 " " " "	1.9¢
1934..	1716 " " " "	1.5¢
1943..	2220 " " " "	1.19¢

As you plan your post-war home remember that you will want more and more electrical comforts. When you build or remodel, be sure that your home is wired adequately, with plenty of wall and other outlets in every room. Plan wisely now to take full advantage of this Hydro of yours.

THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO

HYDRO News

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DRESS PARADE

Safety Demands Good Street Lighting



Two-thirds of all street accidents occur at night when visibility is low, even though traffic is only one-third as heavy as in the daytime. During the daytime there is adequate visibility, while at night the visibility is inadequate for safety.

Experience has proved that a satisfactory street lighting installation will reduce night street accidents to the daytime level.

Every accident is costly. The amount invested in improving street lighting will be amply repaid by saving human lives and reducing property damage losses.

April and May are marked as "beautification" months throughout Canada. Be sure that this season does not pass without you starting some worthwhile effort toward greater beauty in your municipality.

HYDRO'S POST-WAR PLANS

Programme, Envisaging Great Increase In Use Of Hydro Service, Calls For Addition Of Over 500,000 Horsepower During Next Few Years And Further Consolidation Of Transmission And Distribution Facilities

An Address By DR. THOMAS H. HOGG,
Chairman, The Hydro-Electric Power Commission Of Ontario, At The Annual Convention
Of The Ontario Municipal Electric Association And Of The Association
Of Municipal Electrical Utilities, Toronto March 5, 1946.

FOR the second time in its history Hydro has withstood the test of war. Through nearly six years it provided electrical power for the vast war production programme of Ontario which represented about 50 per cent of Canada's industrial contribution to the victory achieved.

Hydro Growth During War Years

I do not wish in this talk with you today to include many statistics. These are more satisfactorily presented in printed form. However, I think a brief comparison between our position in 1939 and 1945 may be of interest. For convenience I shall quote figures for the Commission's fiscal year which, as you know, ends at October 31. The fiscal year 1939, therefore, included the first two months of the war, but you will recall that during the whole of 1939 we were much concerned with a defence programme which had stimulated certain industrial activities, although, on the other hand, the threat of war was not conducive to normal, healthy growth.

In 1939 the **maximum output of power** from all sources was 1,990,000 horsepower. In 1945 the total peak output was higher than in any earlier year, exceeding 2,608,000 horsepower, an increase of just over 30 per cent during the war years.

In 1939 the **total energy generated and purchased** amounted to just over 8,500,000,000 kilowatt-hours. In 1945 it reached almost 12,500,000,000, an energy increase of more than 45 per cent.

As the total peak load is necessarily limited by the generating and other facilities available, and as it includes secondary power from the use of reserve equipment for which there is always a market in wartime, a better comparison of the effective growth of Hydro service during the war years is provided by the growth in primary power and energy.

The **maximum total primary load** supplied by the Commission in 1939 was 1,681,000 horsepower. The maximum primary load in 1945 was 2,470,000 horsepower. This was an increase of 47 per cent as compared with the in-

crease of 30 per cent for the total load.

The **energy output** corresponding to these primary power loads in 1939 was 6,576,000,000 kilowatt-hours and in 1945 11,110,000,000 kilowatt-hours, an increase in **primary energy output** of almost 70 per cent as compared with 45 per cent in the **total energy output**.

In 1939 the total capital investment of the Commission in connection with the co-operative systems and Northern Ontario Properties was just over \$319 million. In 1945 the Commission's capital investment in co-operative properties of the Southern Ontario and Thunder Bay systems and in Northern Ontario Properties on behalf of the province was \$374 million, an increase of 17 per cent. This, however, includes the increase of \$12½ million made in 1945 in connection with the purchase of the system of the Northern Ontario Power Company Limited for the Northern Ontario Properties.

The corresponding increase in capital investment for the co-operative systems alone was from \$279 million in 1939 to \$320 million in 1945, an increase of about 15 per cent.

In 1939 the revenue of the Commission in connection with the co-operative systems and the Northern Ontario Properties was \$36,820,000. In 1945 the corresponding income was approximately \$57,326,000, an increase of 55 per cent over 1939.

To sum up: over the six-year war period the Commission was called upon to meet a 47 per cent increase in primary load; a 70 per cent increase in primary energy demand; with a resulting increase of 55 per cent in revenue. Unlike many other commodities, the cost of Hydro service was not increased but, on the contrary, substantial reductions were made in both wholesale costs and retail rates.

This is an achievement of which we may well be proud. No war industry lacked sufficient power for its needs and no major breakdown curtailed essential production. Credit for such performance is due to every Hydro employee throughout the Province—from the executive in the Head Office to the lineman in the small village. Can-

ada may well be proud of Hydro's contribution in time of war.

Problems Of Peace

Now we turn with confidence from the problems of war to the problems of peace.

We entered the war, as you know, well prepared with adequate reserves of power. As the war progressed we managed from time to time to augment our power supplies to keep pace with demands, trying always to limit our construction to a minimum in conformity with the national policy of husbanding the limited supplies of men and materials.

When the war ended we had practically reached the limit of our capacity. We had been carrying on month after month, unable to improve or increase our facilities to any extent because of the shortage of men and materials. We had hoped for a recession in load, which would have enabled us to rehabilitate our overloaded equipment and lines. On the contrary, we have experienced a continuous increase in demand. Ever since V-E Day the primary peak load of the Southern Ontario system has continued month by month to exceed the demand for the corresponding month of the previous year. (Those of you who follow the diagram of peak loads given each month in Hydro News will have observed this interesting fact.)

Today we should have at least about 200,000 horsepower of surplus capacity. Such a surplus would greatly simplify our operating problems, but not having that surplus makes the provision of additional future power supplies a very pressing and difficult problem for the Commission.

Before turning to a consideration of our post-war plans for meeting this situation and for other activities, I want just to refer to the acquisition of the system of the Northern Ontario Power Company Limited.

Northern Ontario Power Company

As you know, for about fifteen years The Hydro-Electric Power Commission, on behalf of the Province, has been supplying power to a number of mining areas in Northern Ontario. During this period it has constructed and acquired a number of generating stations and transmission networks. Through the transmission network associated with the Abitibi Canyon generating station the Commission, on behalf of the Government of Ontario, has been supplying power in the territory served by the Northern Ontario Power Company.

In the process of serving mines desiring to obtain service from the Commission there was unavoidable duplication of facilities to an extent that was becoming uneconomic. It became evident that the best interest of the mining areas in Northern Ontario would be served by the amalgamation and physical integration of the two systems. Negotiations were entered into by the Commission, on behalf of the Government, and the Commission acquired the properties of the Northern Ontario Power Company. These properties have now been incorporated into the Hydro system serving the Abitibi district of the Northern Ontario Properties.

The agreed purchase price of \$12,500,000 has been covered by the issue of short term bonds of \$5,000,000 at

2 per cent becoming due in 1950, and \$7,500,000 of longer term bonds at 3 per cent, becoming payable in 1960, but callable under certain conditions before that date.

The physical assets of the Northern Ontario Power Company include eight hydro-electric developments having an aggregate capacity of about 60,000 electrical horsepower, a hydro-pneumatic plant supplying compressed air through a pipe line some nine miles in length to mines in the Cobalt area; transmission lines; transformer stations; office buildings and other assets.

The Commission believes the acquisition of the assets of the Northern Ontario Power Company will be beneficial to the mines of Northern Ontario. The rates for service to the mines formerly served by the Company have, of course, been adjusted to the standard Hydro rates.

I now turn to our post-war plans.

POST-WAR PLANS

As I have stated to you on several previous occasions, the problem of planning wisely for the future power needs of Ontario is a difficult one, nor does it grow easier as the size of the Hydro undertaking grows larger. For one thing, a 5 per cent increase per annum on a 2,000,000 horsepower load represents 100,000 horsepower, and a five-year programme for supplying such an increase involves planning now for the addition of approximately 500,000 horsepower within the next five years. As I have often pointed out, hydro-electric developments must be planned some years ahead of the actual demand they will be required to meet and the larger this demand and the greater the power developments to meet it, the longer time it takes to build these large developments, even with the greatly improved means at our command for doing these big things in a big way.

I want, therefore, to outline to you the programme which the Commission has in mind. It is a programme that plans for the addition of about 537,000 horsepower during the next few years, made up of one large development and three of medium size. It is also a programme which continues the consolidation of transmission and distribution facilities throughout the whole of Ontario. It is a plan which envisages a great increase in the use of Hydro service by the construction of new industrial enterprises, by improved electrical service in the commercial field, by better street lighting—and, perhaps most of all, by a great increase in the demand for Hydro service in the urban home and on the farm.

In round figures, the capital expenditures in the first five years of this programme, 1946 to 1950 inclusive, may amount to about \$200 million. Of this the expenditure of about \$112 million was approved in 1945. A further \$65 million relates to other additional generating stations, transmission lines, substations, etc., and \$23 million for the rural five-year plan. You will note that I said this large programme may amount to \$200 million. What I mean is that it is contingent upon our ability to procure the necessary labour and materials and, of course, it is flexible to some extent in the matter of timing.

Work Already Approved

The development of hydro-electric facilities already approved includes the extension of DeCew Falls generat-

ing station, 70,000 horsepower; new developments at Stewartville on the Madawaska river, 54,000 horsepower; at Des Joachims rapids on the Ottawa river, 360,000 horsepower (initial); and on the Aguasabon river in the Thunder Bay district, 53,000 horsepower. This makes a total of 537,000 horsepower of new power. Certain engineering work on all these generating plants has been started. In addition, approval has been given for the construction of a new frequency-changer station at Scarborough. The total expenditures for the foregoing post-war programme, including the associated transmission lines, totals \$112 million.

I will now deal briefly with each of the projects to which I have referred.

DeCew Falls Extension

When the first 25-cycle unit was constructed at DeCew Falls it was undertaken specifically to provide more power for war requirements. The completion of this development was greatly facilitated by the fact that we were able to transfer from the Abitibi development a spare unit comprising turbine and generator. When this power development was constructed, certain provisions were made for the installation of a second unit. Work was commenced during the summer of 1945 and it is estimated that its construction will extend over a period of two years. The new unit will have a capacity of 70,000 horsepower under 280 feet head and its output will be available to the Southern Ontario system. Its cost will be about \$7,700,000.

Stewartville, Eastern Ontario

To meet immediate growth requirements in Eastern Ontario, a 54,000 horsepower development at Stewartville, on the Madawaska river, was authorized at a cost of \$9 million and its construction has already started. The new development, in head and capacity, is similar to that completed in 1942 at Barrett Chute higher up the same river. The dam will be a gravity type, situated about eight miles southwest of Arnprior, and the full head of 150 feet will be developed at the dam. Two units of 27,000 horsepower each will be installed.

Des Joachims—Ottawa River

The third and most important hydro-electric development authorized by the Commission in 1945 is that at Des Joachims site on the Ottawa river, situated forty miles upstream from the town of Pembroke. Power from this plant will increase the resources of the Southern Ontario system. The main dam of this development will form the most important structure. A gross head of 135 feet will be available at this site and the dam will back water up the river for a distance of 60 miles.

Work will commence during 1946 and present plans call for its completion in 1949. For the initial installation of 360,000 horsepower, the present estimate of cost is \$51 million.

Aguasabon—Thunder Bay District

To increase power supplies for the Thunder Bay system a fourth unit was placed in service at Alexander generating station on the Nipigon river on October 1, 1945. This installation produces an additional 19,000 horsepower,

and it is planned to provide an additional transmission circuit to Fort William. As most of you know, the Ogoki diversion made the installation of this unit an economic possibility. It is anticipated that this additional power will provide for the normal growth which is expected during the next two or three years.

You will recall that in the year 1944 the Thunder Bay district was called upon to supply electric power for the development of the new Steep Rock iron mines in the Rainy River district to the west of the cities of Port Arthur and Fort William. There has now materialized a demand for a substantial power load at a proposed pulp and paper development near the mouth of the Aguasabon river, about seventy miles east of Alexander generating station on the Nipigon river. After considering various ways in which this load could be served, it was finally decided to develop a site on the Aguasabon river, near the mouth of which the pulp and paper mill is to be constructed, and tie in this station with the Alexander development. You will recall that some years ago the Commission, on behalf of the Government, constructed water diversion works designed to store water on Long lake and divert the flow southward to lake Superior. This water flows through the Aguasabon river and greatly increases its flow.

The proposed hydro-electric development will have a capacity of 53,000 horsepower under a head of 300 feet and will cost about \$8,500,000.

In connection with the foregoing developments a number of important transmission lines have been planned by the Commission. In Eastern Ontario a new 60-cycle transmission line to operate initially at 110,000 volts, and possibly later at 220,000 volts, will be constructed from Stewartville to Oshawa. This will also tie in with the Barrett Chute generating station. It is an important link in the consolidated transmission network of the Southern Ontario system. The length of the line is 163 miles and will cost approximately \$3 million.

The second transmission line of importance is a 60-cycle tie line from Oshawa west to Scarborough and thence northerly to Barrie. This line will provide a 60-cycle tie between the Eastern Ontario and Georgian Bay divisions. At Scarborough a frequency-changer station with an initial unit of 25,000 kilovolt-amperes will connect up with the above 60-cycle tie-line and be connected by a 25-cycle tie to Leaside transformer station. The 60-cycle tie-line with a length of 95 miles is scheduled for completion during the summer of 1946 and the frequency-changer station with the line to Leaside in the summer of 1947. The total estimated cost for the foregoing tie-lines and frequency-changer station is \$5 million.

The third important transmission line is the transmission line from Des Joachims generating station on the Ottawa river to distribution centres at Burlington and Islington. This transmission line, about 235 miles long, is estimated to cost \$24 million, with its associated terminal stations.

The programme which I have briefly outlined provides for the construction, during the next four or five years, of generating stations with an aggregate installed capacity of 537,000 horsepower estimated to cost \$76½ million, and in addition, the construction of 573 miles of main transmission lines and tie-lines together with one frequency-

changer station of 25,000 horsepower at an additional cost of \$35½ million, the total expenditure involved being in the neighbourhood of \$112 million.

Future Plans

Future construction of additional generating stations and transmission lines will, of course, depend upon the way in which the Hydro load in Ontario grows during the next few years, always having in mind, however, the necessity for planning well ahead of actual demands. We will, of course, look forward to future developments on the Ottawa river and, we hope, the ultimate development of the international section of the St. Lawrence river.

It is, however, not necessary at this time to refer in any detail to a number of other generating plants, transmission lines and network improvements. The Commission, nevertheless, has been studying several of these which will become necessary in accordance with a well-planned scheme of progressive expansion. Work of this character already considered would involve an expenditure of an additional \$65 million.

Islington Service Centre: Kipling Transformer Station

There is, however, one post-war project to which I should like to refer. The Commission has acquired an extensive site on Kipling Avenue near Islington on which it proposes eventually to provide research and testing laboratories, a large terminal transformer station, and a storage and maintenance service centre with buildings for workshops, truck repair facilities and garage and with railway trackage for a pole storage yard and other purposes.

Plans for utilization of the site are being developed. A portion of the switching equipment for the transformer station is scheduled for construction this year. The completion of the project will provide adequate facilities for the consolidation of storage and repair activities which hitherto have been carried out in many separated localities, and will also provide adequate research and testing facilities conveniently situated with respect to workshops and power supply.

Rural Lines And Extensions

Finally, as you know, the Commission has a five-year rural extension plan. This plan contemplates the building of 7,330 miles of primary line to serve nearly 58,000 customers of which more than 32,000 are farm consumers.

The total expenditure involved for primary and secondary lines and equipment is about \$23 million, of which the Province will contribute as grants-in-aid about 50 per cent or \$11,500,000.

Cost Of Power And Reserves

Your joint Associations, representing the Hydro municipalities of Ontario, are fundamentally interested in the financial stability of Hydro. For more than 30 years you have witnessed a progressive decrease in power costs and, at the same time, have seen a growth in Hydro reserves. Reductions in rates have been almost a yearly event in Hydro's history, in face of increases in the cost of almost every other commodity.

It is to be hoped that this amazing record will continue, but I want to issue just a word of warning in con-

nection with it. Our business is built upon very large capital investments with comparatively small income returns. This means that for financial stability it is necessary to protect adequately the invested capital. As I have previously explained, the Commission's reserves are set up: 1—to retire debt; 2—to ensure continuance of a modern service; and 3—to prevent rates from fluctuating unduly.

With the trend towards rising costs of materials and labour, and with the very large construction programme ahead of us, I do not think we can expect a continuance in the reduction of rates or a lessening in the growth of reserves in the near future.

FREQUENCY CHANGEOVER

I now come to the discussion of a problem that has received a great deal of popular attention during recent months and about which I have already spoken at certain district meetings of the O.M.E.A. and before other bodies. I refer to the matter of the proposed frequency change in the Niagara division, from 25 to 60 cycles.

This is a matter about which the Commission has been thinking for many years and had of necessity to shelve during the war years. However, the executive of the Ontario Municipal Electric Association some months ago asked the Commission to study and make a report on this matter.

It was hoped that the Commission would be in a position to make a full report on this matter to you at this convention, but the problem is so large and has so many ramifications, both technical and economic, that we decided to complete our studies before making any interim report to you. When our report is complete, then I hope that you will give it very careful study for upon the decision as to the policy to be followed will rest the economic future of this great Province.

I think I owe it to you, however, to outline briefly the problem we face and, if possible, to give you an impartial survey of what the future holds.

First let me deal directly with the suggestion that crops up whenever frequency is discussed, that somehow the Hydro was remiss in not adopting 60 cycles for the Niagara system way back in 1907 when it started. On the contrary, it is my considered opinion that had the Commission of that day not accepted quickly the 25-cycle supply available, by entering into a contract for 100,000 horsepower at the frequency adopted for the great developments then being completed at Niagara, the Hydro enterprise might never have gained a secure foothold in Ontario.

There was no 60-cycle power available in those days at Niagara Falls and, as you know, the Commission finally took over the Ontario Power plant in 1917, and later the Toronto Power plant in 1922, both of which were 25-cycle plants.

In those early days, time was of the essence of Hydro success. Upon the basis of 25-cycle power being available in large amounts, and at low cost, Hydro got a head start, which in terms of low-cost service it has retained ever since. It has built up an industrial centre second to none in Canada, and has continuously been several years ahead in the low cost of its residential and commercial service and in the use made of electricity by the citizens of

Ontario. You cannot have your cake and eat it, too.

But today we are in a new era. Hydro has reached a place where it should examine and discuss the question whether a gradual change to the North American standard of 60 cycles would be worthwhile, provided it does not jeopardize its economic status.

The Hydro is, of course, not unique in having adopted a frequency of 25 cycles. In the early experimental days many different frequencies were used. Between 1892 and 1900, however, the two frequencies of 60 cycles and 25 cycles became firmly established in the United States because of the aggregate capacity of the plants constructed or planned for each of these frequencies. In Canada also there were instances outside Ontario of communities or districts being served by 25-cycle supply, and still are, but it is noteworthy that both in Canada and the United States the number of such places has been steadily decreasing and at the present time most have changed to 60-cycle supply, at least for the general distribution to residential, commercial, municipal and smaller industrial consumers.

The nearest and perhaps the outstanding example of this is in Buffalo, where the Niagara Hudson Company commenced some ten years ago to convert parts of its 25-cycle system to 60 cycles. Today it supplies a load of about 300,000 kilowatts at 60 cycles and this includes its general service to the domestic and commercial consumers of Buffalo, but it still has about 850,000 kilowatts of 25-cycle load. Some large industries such as steel mills prefer 25 cycles and others such as the electro-chemical plants can use any frequency, so that it is economic to retain in operation for some time certain 25-cycle plants even after the majority of domestic and commercial customers have been changed to 60 cycles. This no doubt would be the experience also of Hydro.

This almost universal acceptance of the 60-cycle standard for general central station supply in North America is perhaps the strongest argument in favour of its adoption by Hydro, but we must not be under any delusion as to the magnitude and complexity of the problems involved in the change. Nor can we disguise the fact that the cost of the changeover must be a charge upon the undertaking, that is, in the last analysis, upon the consumer.

Let us just glance at the advantages of the change to 60-cycle service and the problems involved for consumers in the domestic, commercial and industrial classes.

How Change Would Affect Consumers

An important benefit to the domestic class would be the ability quickly to take advantage of new developments and appliances which will in the future, as in the past, first become available for 60-cycle supply because of the predominance of this frequency throughout North America. Modern lighting equipment, for example, available for factory, office and home use operates more satisfactorily at 60 cycles.

The disadvantage of 25-cycle supply for domestic incandescent lighting has, I believe, been greatly exaggerated. Some people, it is true, are more sensitive than others and become conscious of a slight flicker when naked low wattage bulbs are exposed, but, with well-planned incandescent

lighting, most people are entirely unaware of it. There does not seem to be much scientific support either, for the claim that it is injurious to the eyes, indeed some authorities contend it may even be beneficial. However, I think we may consider that if we had the chance we should choose 60-cycle supply for lighting. How much are we prepared to pay for this preference?

To the individual domestic consumer 60-cycle service would make no difference to his heating equipment—electric range, toaster, grill, iron, etc.,—but would affect his larger motor-driven appliances. From a cost point of view the refrigerator would involve the most expensive adjustment and the washing machine would also need a change of motor. Some of the smaller fractional horsepower motors are universal or can be adjusted for 60-cycle service, but 25-cycle clocks, or time controls on ranges, could not be used on 60-cycle service. Workshop motors, blowers for furnaces, oil burners, etc., would have to be changed to 60-cycle equipment. Sixty-cycle motors are less costly to manufacture and have a greater speed range. New 60-cycle motors and equipment driven by them, therefore, would be slightly lower in cost, partly also because they would conform to a larger mass production market.

The same general considerations would affect the commercial consumer. The degree and manner in which he would be affected would vary with the relative importance to him of his lighting, heating and motor-driven equipment. These in turn would vary with the character of his business, merchandising, restaurant, etc.

In the industrial field the change would be more momentous and in many cases the disadvantages and cost might outweigh the immediate advantages. The cost of changeover, for example, would be relatively high in modern factories using a multiplicity of individual motor drives. In such cases there would, of course, be the possibility of obtaining the advantages of 60-cycle service for lighting, etc., and of using for a few years frequency-changers for a proportion of the motor load needed, mobile frequency-changers in various capacities would no doubt be an important technical tool in the changeover technique.

A Three-Part Problem

The foregoing briefly touches the highlights of a changeover from the consumer's angle.

The changeover problem consists essentially of three parts: 1—the supply of 60-cycle power to the municipality; 2—the supply of 60-cycle power by the municipality to the consumer; 3—the changeover of the consumer's 25-cycle equipment.

1. The problem of supply of 60-cycle power in the 25-cycle area is not difficult technically and presents no economic problem providing it can be accomplished at load growth speed. By that I mean if all new load growth could be supplied at 60 cycles, instead of 25 cycles, then the Commission's power costs would not be greatly increased, because the savings in the cost of transformation and other equipment tend to offset the increased cost of transmission. This, however, is an ideal condition which cannot be met, but it is possible for the Commission to supply all new power at 60 cycles and effect a gradual changeover of a large part of its existing 25-cycle facilities

without any major change in the wholesale cost of power to municipalities—provided growth in use continues without any major setback and conversion can be accomplished stage by stage in an economic manner.

2. The problem of the supply of 60-cycle power by the municipalities to the consumer is likewise not difficult technically, but economically it is more difficult to appraise because each municipality is an individual problem. The time factor, whether a partial changeover is made initially, or a complete changeover all at once, creates a variable cost factor and is something to which the Commission is giving careful consideration.

3. The changeover of the consumer's 25-cycle equipment again technically offers no big obstacles, but from an economic standpoint it offers the most perplexing problem. Obviously in the final analysis it is the consumer who, in the long run, will pay the total cost of all and any changeover, but it is also obvious that it would be inequitable to ask consumers individually to bear the whole cost of the changeover of their own equipment, since all share the benefits and the benefits are not necessarily in proportion to the individual consumer's cost of changeover from 25 to 60 cycles.

Naturally you are most interested in costs and in the economic advantages which may accrue from any changeover in frequency in the Niagara division of the Southern Ontario system. We all realize that this change should not be entered into without the most searching analysis. It is one which will mean the expenditure of many millions of dollars. There is, however, the consideration that it will use many millions of man-hours of labour. Now this may be beneficial or the reverse. It would not be beneficial if competition for skilled labour made such labour less available for the completion of a rural electrification plan, the production of agricultural implements and electrical appliances, or for housing improvements, new schools and certain social services. It might, on the other hand, be very beneficial if, being started, it could be speeded up should economic depression or widespread unemployment threaten.

Naturally it is not easy for the layman fully to appreciate the many far-reaching technical and economic problems which would be involved by a changeover from 25 to 60 cycles in the Niagara division. It is important, therefore, that a very thorough analysis of these problems be made before the Commission with the municipalities, arrive at a final decision.

However, the decision must be made within a limited time because it will affect plans for additional facilities in the very near future—most immediately the provision of additional generating capacity.

Changeover Procedure

If a decision is made to commence a gradual changeover in frequency, then the Commission will set up an organization to plan and carry it out step by step. The first step would be to construct a 60-cycle development instead of a 25-cycle development on the Ottawa river at Des Joachims rapids. This first step would, to use a now familiar phrase, place a ceiling upon the total system use of 25-cycle power.

To make the frequency change we should need to have at all times a substantial reserve of generating capacity. We should also need an adequate reserve of transformer capacity.

Following the construction of a new large generating station, the Commission would then select certain 25-cycle areas to be converted to the higher frequency. Over a period of years other areas would be successively converted. In order to carry out this programme the Commission's changeover organization would co-operate first with municipalities desiring to change and probably situated on the outlying portions of the Niagara division, so that in time the areas served by 25-cycle power would be progressively diminished as the area served by 60-cycle power was extended south and west from the Georgian Bay and Eastern Ontario divisions.

The Commission, if requested by municipalities, would probably provide the engineering and construction facilities to make the necessary changes in distribution equipment within the municipalities and also set up a special organization for economically and speedily changing over consumers' equipment. The latter would entail careful planning and timing in order that any inconvenience to consumers would be reduced to a minimum.

As I have already said, this problem has many ramifications, both technical and economic, but when our report is completed it will give you, I hope, a clearer picture of what the proposed changeover will mean. There is no doubt that a change will involve the expenditure of a great many millions of dollars, but from a long-range picture it would certainly be desirable if we could standardize our frequency without undue financial shock to the system.

We must also remember that the incentive to standardize on 60 cycles in the United States has been due chiefly to higher speeds necessary in steam turbines, a factor which does not yet concern us in Ontario, but as we approach the end of our hydraulic resources it will become a factor of increasing importance.

After proper study by the municipalities should a decision be made to make this change, then I would suggest that the present consumers should not have to bear all the costs of the benefits which will be extended into the future.



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THE FRONT COVER



WHEN you add bunny,
bonnet and board
walk together and think of
a title such as "Dress Par-
ade," they add up to a
front cover which is sym-
bolic of Easter.

In the production of this
cover, featured this month,
Hydro News acknowledges
the helpful co-operation of
Mrs. J. Shand of the T.
Eaton Co., and also the fine
work of Miss Iris McDonald
of Brigdens who acted as a
modiste and tailor to Mr.
and Mrs. Bunny.

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CONTENTS

	Page
Commission Employees Who Gave Their Lives	2
Be Of Good Cheer	3
When Day Is Done	4
Dr. R.W.I. Urquhart Named Medical Director	7
Dr. Thomas H. Hogg Addresses Convention	9
Emphasize Need For Adequate Wiring	10
Goodwill Keynote Of O.M.E.A. Convention	12
Reports Presented at A.M.E.U. Convention	14
Down Through The Years	15
O.M.E.A. President's Message	18
Push Button Transit	19
O.M.E.A.-A.M.E.U. Convention Dinner	26
Developments In Field Of Lighting	28
120-Volt Standard Advocated	35
Hydro Home Forum	37
This And That	38
Downwords	39
Monthly Load Summary	39
Municipal Loads	40





IN PROUD MEMORY OF THOSE MEMBERS OF THE COMMISSION STAFF WHO GAVE THEIR LIVES FOR THEIR COUNTRY 1939-1945

Name	Department	Name	Department
Anderson, Bruce B.	Hydraulic	Martin, T. Russell	Operating
Bate, John R.	Operating	Messing, Earl E.	Operating
Bisheff, George E.	Electrical Engineering	Moreau, Bruce	Accounting
Brown, John W.	Property	McCausland, Wm.	Construction
Brown, Leonard G.	Research and Testing	McConvey, Carl J.	Property
Buckmaster, John	Property	McLaughlin, Andrew	Municipal
Budnick, Nicholas	Operating	McMullen, Douglas J.	Operating
Carter, R. G.	Property	McRoberts, Clare	Electrical Engineering
Charbonneau, Milton	Construction	Naismith, D.	Construction
Clements, H. R. C.	Municipal	Noble, N. A.	Electrical Engineering
Cogger, Walter L.	Electrical Engineering	Oakley, Wm. Herbert	Operating
Edwards, A. R.	Municipal	Poole, Robert N.	Municipal
Ellis, Jack	Research and Testing	Pound, J. Russell	Electrical Engineering
Grear, Henry W.	Production and Service	Reynolds, George G.	Electrical Engineering
Hall, Reginald J. W.	Electrical Engineering	Riddell, Charles J.	Operating
Harding, A. C.	Operating	Robertson, J. M.	Electrical Engineering
Hollingsworth, W. W.	Electrical Engineering	Rogers, Thomas A.	Operating
Hostetler, Charles W.	Operating	Smith, Thomas T.	Operating
Janney, W. H.	Accounting	Walker, LeClare A.	Operating
Kilsby, Albert C.	Operating	Wall, Frederick V.	Filing
Kingshott, Gerald	Construction	Watson, W. J. C.	Municipal
Kinnear, Calvin	Construction	Wilson, John W.	Construction
LaRose, Joseph A. P.	Operating	Wilson, W. B.	Electrical Engineering
Lennox, Allen J.	Operating	Wolch, E. B.	Construction
Lovering, Mervyn	Construction		



BE OF GOOD CHEER

(By THE BYSTANDER)

THIS is our post-war world, the time to which we have looked forward for six strenuous years. Yet all over the earth there is unrest and turmoil. With victory achieved, the nations struggle restlessly for stability and security; but each morning the newsboy dumps on our doorstep the troubles of a world at peace.

As an antidote to the pessimism that might be engendered by too great a preoccupation with the aftermath of war, attention is invited to an organization which stands ready and able to put its shoulder to the wheel of orderly progress—our Ontario Hydro enterprise. An understanding of the part it is prepared to play in our post-war planning should give us renewed faith in the future of our Province and Country.

First, however, it may be suggested that part of our passing discontent results from the fact that we were led to expect, if not to believe, that the cessation of hostilities would see a quick realization of a bright new world. So we made post-war plans galore, but the trouble with nearly all of them is that they are concerned with physical things and need both labour and materials, and so far both are in short supply. But this situation will right itself if we put first things first and do not whip a tired horse. Cannot we think of a better plan than a further dose of urging each other to greater endeavour, to increased output, to harder work?

Perhaps it would be a good thing for all of us if we learned to take life a day at a time, each doing our best with the task immediately at hand. Already our fighting men are turning happily from destructive duties to constructive tasks. They will return to the forest and the mine to join the producers of basic materials—and the flow of lumber and other building products, of iron and steel, of nickel and copper, of asbestos and cement, will increase in volume and be directed to the tasks of building homes instead of barracks, agricultural implements instead of armaments, schools and community centres instead of training centres and canteens.

They will return to the factories, and reinforce the workers endeavouring to overtake the accumulated consumer demand for all the gadgets we have been unable to obtain in recent years. And, most important of all, they will return to the farms, and in due course Canada may again become a land of plenty and prosperity, for all who are willing to work with goodwill and in a co-operative spirit.

In tackling this great peacetime task we are not likely to go back to the methods of yesterday.

Everywhere we turn, in the mine, in the factory and on the farm we find that there is being utilized electric power and new and more powerful or more ingenious machinery to minimize the manpower-hours required to achieve a maximum of production.

Soon, perhaps sooner than we now expect, production will catch up to demand, the ladies will get their nylon hose and the men (we hope) will be able to purchase shirts for their backs. The apple will no longer be a curiosity and even tropical fruits may become a common sight on our tables.

Let us then exercise a little common sense and patience. During the war we Canadians produced sufficient to equip and maintain hundreds of thousands of fighting men overseas. These men, speaking economically, became consumers on a big scale and were withdrawn from ordinary production. Yet, as a nation, in addition to providing for our fighting men and for ourselves the necessities of life far above the subsistence level, we were able to contribute to our common cause immense quantities of food and munitions of war.

It is obvious then, that if we can solve the problem of distribution, we can provide for our own people, from our own resources, the means for a full life, according to modern standards, including sufficient solely Canadian products to trade for the things we cannot produce. And we can do more, we can help the lame dogs among the nations over the stile of their present difficulties.

Assisting all along the line of our complicated production set-up, we find throughout Canada hydro-electric power in ample supply. The production of wealth per capita is, in fact, largely a function of the horsepower per capita—mechanical or electrical—that we are able effectively to employ.

Too frequently the conception of a "higher standard of living" is interpreted in terms of things that contribute to our bodily well being. Should it not also recognize, for the individual, more free time for a greater diversity of interests, travel, recreation, hobbies, community work and eventually retirement at a reasonable age; and for the community, facilities for the group enjoyment of these things, together with parks, better homes, better schools, libraries and more attractive environment, be it in city, town or village.

A higher standard of living? Yes. But also, *a better way of life.* To the former, Hydro service will certainly contribute. To the latter, with goodwill and co-operation we may also, in time, attain. BE OF GOOD CHEER!



CHAPTER II—SOME PRIMITIVE LIGHT SOURCES

By Mildred C. Redmond, Hydro News

A typical tale that our remote ancestors told to explain the mystery of fire and light is the Greek legend of Prometheus. The story goes that in far away times before history began, fire existed only in heaven. Prometheus, pitying mankind, determined to steal it from heaven and give it to man to make his life easier. He succeeded in doing this by exhibiting great daring and cunning, but afterwards had to suffer terrible punishment for his theft. From this origin of fire the Greeks traced all the arts and skills of man.

The feeling of reverence for light is woven through most mythologies and religions. The sun, man reasoned, is the source of life; darkness is the negation of light and life and, therefore, symbolizes evil and death. This motif runs through the whole story of civilization from the time of the primitive burials when lamps were buried in the grave to light the way to the next world, to the eternal flame now burning on the tomb of the unknown soldier.

Each religion has its own special symbolism of light. Lamps form an important part of the Hindu festival in honour of the goddess of prosperity, the eternal lamp burns on both the altars of the Jewish synagogue and the Catholic church; the Mohammedans light lamps to signify holy places and the Greeks and Romans made use of sacred light. An interesting modern use of symbolism was the burning brand from a fire on Mount Olympus that was carried to Berlin by a series of runners to light a fire which burned throughout the Olympic games in 1936.

In Rome, the Vestal Virgins, a powerful and exclusive group of priestesses, tended a sacred fire which was supposed to have been brought by fugitives from Troy. The idea of the eternal fire probably originated from ancient times when it was of the greatest importance that a fire should be kept always burning to preserve it.

A Precious And Intimate Possession

The light in the home has been one of the most

*S*INCE the dawn of history, the fight against darkness has been one of man's most urgent problems. In this, and in succeeding articles in this series, Miss Redmond traces the history of light from the primitive days of brands and torches down to the lighting of modern times.—The Editor.

precious and intimate possessions from the time of our early ancestors, living in their first rude caves. Darkness was one of the elementary enemies and a great battle was won when prehistoric man made the tremendous discovery of fire. Little wonder it was regarded as a gift from the gods.

There is no knowing how fire was discovered or where. It was probably found by different groups independent of each other in various parts of the world. The common, primitive methods of starting a fire were with a spark and tinder or by friction. The first method would be the logical discovery of those men who first struck out flint implements.

The first fire was both heat and light. Not only that, but it must have been a safeguard as well against wild animals, which to this day hold fire in respect and fear. For the first time man could carry on his life after dark and undoubtedly the first form of social intercourse began around the tribal fire. To the first ingenious cave-man who plucked a burning brand from the fire and stuck it in the wall to light up a dark corner, must go the honours of the invention of artificial lighting. Its story from then to the present day is an interesting one. It might be said to be the story of civilization itself. It cannot be treated altogether chronologically for development around the globe has taken place at very different rates. To this day there are places in remote parts of Africa and South America where life is conducted much as it was in the stone age and where the sole source of light is the open fire. Indeed travellers in parts of Europe as late as the 19th century reported that their way was lit by fires in baskets on tops of poles. The idea of a fire basket on poles survived from very primitive times



THIS STRANGE-looking object is the venerable ancestor of all artificial lighting—a prehistoric pine knot. It was carefully chosen, no doubt, by some ingenious cavewoman, so that, standing on its own feet, it could light the family dinner table.

and actually was the medieval form of lighthouse.

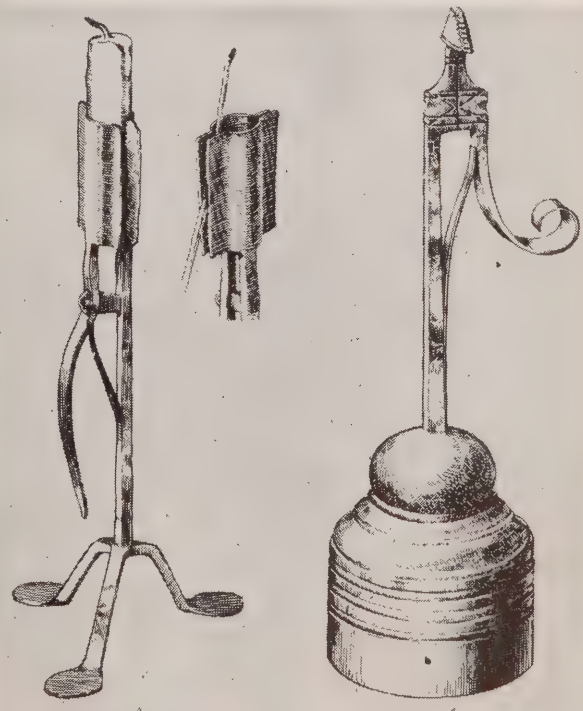
To return to the caveman, when the weather was hot he learned to build a small fire or heaped coals on a shelf or he thrust a knotted piece of pine into the wall. Or when he wanted to visit his neighboring caveman he carried a burning piece of wood. Slowly he developed this into more efficient kinds of torches and they became the standard lighting for many a long century. The torch is the ancestor of the group of lights including rushlights, tapers and candles. The lamp is a different story.

Early Attempts At Lighting

One of the most curious facts in the history of human progress is that apart from questions of detail and design, no important changes in artificial illumination were made from the time of the invention of the first primitive

forms until only a century and a half ago. Other techniques progressed at varying rates but our great grandfathers had lighting no better than the Romans or ancient Egyptians.

The story of early attempts at lighting is that of man's ingenuity in putting to use materials at hand. Ancient Europe was a country of dense forests and so wood was the obvious source of both light and heat. The torch of burning wood seems to have been the common form of lighting right through the prehistoric eras. Sometimes it took the form of a splinter stuck in the wall and sometimes of a burning lump of tinder pulled from the fire. These rude torches have been used not so long ago. Scott in "The Legend of Montrose" describes a table scene during a feast. Behind each seated guest a giant Highlander stood holding a blazing torch of bog pine. The early New Englanders used pieces of resinous pitchpine, common in New England, cut in length and size like large candles and stuck between the stones of the fireplaces. These gave a lot of smoke but were in common use. A settler writing in 1642 says "Out of these pines is gotten the candlewood that is so much spoken of, which may serve as a shift among the poorer folk, but I cannot commend it for singular good because it droppeth a pitch form of substance where it stands". As for the burning splinter thrust in the wall,



A. RUSH AND CANDLE HOLDER, LATE 17TH CENTURY. Height 8 ins. Mr. C. M. Fawcett's collection.

B. RUSH HOLDER, 18TH CENTURY. Height 10 ins. The Lady Carver's collection.

COMMON RUSHES, soaked, peeled, saturated with grease and held in a holder with a metal clip, lit many a cottage of our own ancestors. The rush was held at an angle, lit at the upper end and burned for about an hour. The stand on the left is made to hold a candle as well.

it is used to this day in poor Chinese homes and in the cabins of negroes and poor whites in the South.

The torch reached its most perfected form and was used almost exclusively by the Greeks of the Homeric age. By that time it had become a definitely manufactured article consisting of sticks of resinous wood tied together with rushes, papyrus or vine tendrils. They were treated with inflammable substances such as resin, pitch or wax, and later, mixtures were used as fillings for hollow cases of metal or clay and these burning holders were what the Greeks called "pharos".

Torch Used Ceremonially

Evidence from vase paintings shows that both these forms of torches were used. Another refinement was a socketed torch holder for the hand. The torch in Greece was used not only for lighting but was used ceremonially as well. Torches accompanied the Greek bride to her new home and the dead Greek to his burial place. This is probably the origin of the candles which to this day burn around the Catholic bier, the custom being carried on by the Romans into medieval times.

After the origin of the lamp the Greeks gave up the torch but the peoples who lived in north Europe, the barbaric Teutons, Celts, Saxons and so on depended largely on torches provided by their great pine forests. From our ancient sagas we know that Anglo Saxon halls were lit by them.

The thin splinter of wood, cut for the purpose and dried and then put into some sort of holder, had a



PROMETHEUS, ACCORDING to the legend of the ancient Greeks, stole fire from heaven and gave it to mankind. They marked this as the real beginning of civilization for from this gift of fire and light they traced all the arts and skills of man.

widespread use parallel with the torch. In the forest areas of north Europe these splinters have been in use even up to modern times. The earliest holders were made of wood with a small metal clamp at the top to hold the splinter. It was held at an angle with the flame at the lower end while an iron plate was often placed on the floor beneath the holder as a precaution against fire. It

(Continued on page 36)



THESE YOUNG Greek runners had to have a steady hand as well as good legs to compete in the Olympic games. The torches they carry were the common light source of the time, and were carefully made of sticks of resinous wood bound together with rushes or vines.

DR. R. W. I. URQUHART NAMED HYDRO'S MEDICAL DIRECTOR

**Succeeds Late Dr. R. E. Gaby—Saw Service In
Last Two Wars And Has Done Extensive Research Work**

Dr. R. W. I. Urquhart has been appointed medical director for The Hydro-Electric Power Commission of Ontario, succeeding the late Dr. R. E. Gaby, who died last November.

The new director was born at Fort Qu'Appelle, Saskatchewan, where he received his public school education. He matriculated from Moose Jaw High School and was taking an arts course at the University of Toronto when the First World War broke out.

Enlisting as a sapper, Dr. Urquhart served in the Signal Corps and transferred to the 14th Field Ambulance C.A.M.C., where he saw service in France. He resumed his studies upon discharge and received his M.A. degree in 1921. Three years later he received his M.B. degree and in 1927, his M.D.

After graduation, Dr. Urquhart did extensive research into the effects of electric shock and his findings were published and widely circulated in the electrical field.

During the recent war, he enlisted early in 1939 and was posted overseas, holding the rank of Lieut.-Colonel, in charge of Medicine, No. 15 General Hospital.

He was released from the service to become Director of the University of Toronto Health Service. Even though he is now with Hydro, his association with "Varsity" is still maintained by his representation of that body on the Ontario College of Physicians and Surgeons. He is also Custodian of Banting Records and gives lectures in Pathological Chemistry. Another position he holds is that of chairman of the National Committee on First Aid, Swimming and Water Safety for the Canadian Red Cross.

As an artist the Doctor is considered to be only fair but, on his own admission, he would have liked to have been a sailor. This life-long ambition has been attained in part. Whenever he can find the time to leave his duties, he ships on a 37-foot yawl on Lake Superior. On these occasions, the title "Doctor" is dropped in favour of "Cap."



RIDING HERD on anything but a porcupine, H. O. Hawke, an honorary president of the O.M.E.A., who owns a grape-fruit farm "deep in the heart of Texas," had no trouble in keeping his seat on that mammoth grape-fruit as it rolled across country on its way to the recent convention in Toronto. Until he could get a branding iron on his charge, he took no chances, and woe to the "rustler" who attempted to deprive him en route of his magnificent contribution to the success of the convention! Needless to say, everyone, including Mr. Hawke, had a "grape" time and, especially Hydro News, when the above photograph was taken! In the vernacular of the street, Mr. Hawke proved that: "He's a good sport."

GEORGE A. SMITH DIES

Prominent in Port Hope municipal and business life, **GEORGE A. SMITH**, aged 75, lifetime resident of that community, died recently following a short illness in Port Hope General Hospital.

Mr. Smith was one time mayor of the town, and is credited with being the man responsible for the passing of the by-law which led to the purchase of the local Hydro-Electric System in 1931. He was chairman of the Commission from 1933 until his death.

Surviving are his widow, one daughter, Mrs. Reginald Porter, three sons, Horace, Aubrey and Arthur.

DOWNWORDS PUZZLE

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
G	E	N	E	R	A	T	I	N	G	P	L	A	N	T
E	C	O	L	O	V	U	L	I	O	L	O	T	O	R
N	C	R	E	T	T	R	L	P	V	A	G	T	C	E
E	E	T	C	O	O	B	V	I	E	N	A	R	T	A
R	N	H	T	R	M	I	S	C	R	E	R	A	U	S
A	T	N	R	A	A	N	T	O	N	S	I	C	R	V
T	R	O	I	N	T	E	R	N	O	P	T	T	N	R
I	I	R	C	D	I	R	A	A	R	H	I	E	E	
N	C	T	D	S	C	U	T	N	S	E	M	V	O	I
G	I	K	R	T	R	N	I	G	G	R	I	E	P	S
U	T	E	I	A	E	N	V	L	A	I	C	N	V	L
N	I	A	L	T	L	E	E	T	C	A	E	S	A	
I	E	S	L	O	A	R	L	R	E	A	I	S	L	N
T	S	T	S	R	Y	S	Y	S	S	L	D	S	V	D

LAST MONTH'S SOLUTION

ON THE left is shown the solution to last month's Downwords Puzzle. The puzzle for this month is to be found on page 39.

"CAMERADERIE" At The Conventions



AT A joint meeting of the O.M.E.A. and the A.M.E.U., Dr. Thomas H. Hogg, chairman of the H.E.P.C., outlines the Hydro programmes for Ontario, which are expected to involve an expenditure of \$200,000,000. The top and centre crowd photographs were taken during the Hydro chairman's address. The bottom illustration shows a section of the crowd at the A.M.E.U.-Electric Club luncheon.



TO ADAPT HYDRO'S FACILITIES TO PRESENT AND FUTURE NEEDS

**Present Programme Provides For Addition Of Approximately 537,000
Horsepower To Commission's Resources, Dr. Thomas H. Hogg
Tells Joint O.M.E.A.-A.M.E.U. Convention Gathering
— Flexible In Matter Of Timing**

TO meet the urgent demand for increased electrical services in the province, The Hydro-Electric Power Commission is planning to embark upon a major campaign of both construction and consolidation according to announcements made by Dr. Thomas H. Hogg, chairman of the Commission, in addressing over a thousand delegates of the Ontario Municipal Electric Association and of the Association of Municipal Electrical Utilities at a joint meeting held during their annual convention in Toronto.

The programme, as outlined, provides for the addition of approximately 537,000 horsepower to the resources of the Hydro system. Transmission and distribution facilities will be consolidated into what will be practically a grid system; and an all-round adaptation of Hydro services to present day and future needs is envisaged by the construction of new industrial enterprises, by improved electrical services in the commercial field, by better street lighting and by an increased use of time and labour-saving electrical appliances in the home and on the farm. It was estimated that in the carrying out of this programme over a period of five years, the capital expenditure would be about \$200,000,000.

Contingent Upon Conditions

Dr. Hogg explained that all this development was contingent upon the ability of the Ontario Commission, the municipal commissions and other enterprises to procure the necessary labour and materials, and that it must be considered as flexible in the matter of timing. Capital expenditures by Hydro up to the present time, he stated, had not exceeded \$14,000,000 in any one year, and the plan as tentatively scheduled called for three times that amount.

The chairman of the Commission drew attention to construction work that had already been authorized, and, in some cases, begun. This included the 54,000 horsepower development at Stewartville on the Madawaska river, the 53,000 horsepower development on the Aguasabon river to serve the pulp and paper and mining industries of the Lake Superior district, and the 360,000 horsepower generating plant at Des Joachims on the Ottawa river.

New Transmission Lines

In connection with these developments, Dr. Hogg told of the important new transmission lines planned by the Commission. In eastern Ontario a line would be built from Stewartville to Oshawa to form an important link in the consolidated transmission network of the Southern Ontario system. It would be 163 miles in length and tie in with the Barrett Chute generating station, and would

operate initially at 110,000 volts and possibly later at 220,000 volts. Another important 60-cycle tie-in line would be built from Oshawa west to Scarborough and thence northerly to Barrie, linking the Eastern Ontario and Georgian Bay divisions. A 25,000 kva. frequency changer set would, as previously noted in Hydro News, be set up at Scarborough, and be connected by a 25-cycle tie to the Leaside transformer station. The 60-cycle tie-line was, Dr. Hogg said, scheduled for completion this summer, while it was expected that the frequency changer station with the line to Leaside would be in operation a year later.

Dr. Hogg went on to explain the transmission arrangements from the Des Joachims generating station. A line 235 miles long would be built to distribution centres at Burlington and Islington. This, with its associated terminal stations, was expected to cost \$24,000,000.

Developments At Islington

The reference to Islington was enlarged by Dr. Hogg in further comment. In addition to the large terminal transformer station it was the ultimate purpose of the Commission to erect research and testing laboratories on the recently-acquired property on Kipling avenue near that town. A storage and maintenance service centre would also be established with buildings for workshops, and with truck repair and garage facilities. A pole storage yard was also contemplated. (It was learned by Hydro News, however, that, apart from the transformer station, plans for the new activities at Islington have not yet taken definite shape. At the present time crews are engaged in clearing the site.)

Must Maintain Financial Stability

Dr. Hogg emphasized the necessity for maintaining throughout all these developments the financial stability of Hydro. In this, both the O.M.E.A. and the A.M.E.U. were fundamentally interested.

"For more than 30 years," the speaker said, "you have witnessed a progressive decrease in power costs and, at the same time, have seen a growth in Hydro reserves. Reductions in rates have been almost a yearly event in Hydro's history, in face of increases in the cost of almost every other commodity."

It was to be hoped, the speaker said, that this amazing record would continue. But it was to be remembered that the Commission's reserves were set up: first, to retire debt; secondly, to ensure continuance of a modern service; and thirdly, to prevent rates from fluctuating unduly. With the trend towards rising costs of material and labour

(Continued on page 32)

NEED FOR ADEQUATE WIRING EMPHASIZED AT CONVENTION

**Operations Of Toronto Electric Service League May Be Extended Throughout
Ontario If O.M.E.A. Motion Is Ratified By Commission—Would Undertake
To Direct And Administer Red Seal Programmes**

IF a motion, unanimously endorsed at the recent O.M.E.A. convention, is approved and ratified by the H.E.P.C., the operations of the Toronto Electric Service League will be extended throughout Ontario to promote a programme of adequate wiring.

The question of such a programme, which was emphasized as being essential if all classes of consumers are to enjoy the maximum benefits from Hydro service, was introduced by convention chairman, W. Ross Strike, K.C.

M. J. McHenry, director of promotion for The Hydro-Electric Power Commission of Ontario, who has made a close study of the question, was called upon to address the meeting.

Work Of Toronto E.S.L.

He drew attention to the work accomplished by the Toronto Electric Service League during the twenty years it had operated in the Metropolitan area of that city. It was generally recognized that it had now attained the position of the pre-eminent North American organization for the promotion of adequate wiring. It had been responsible for the promotion of Red Seal wired homes throughout the city, and these now numbered more than 33,000. Its reports showed that this adequate wiring programme had helped develop a market for the installation of some 15,000 electric ranges and a total market of approximately \$14,000,000 of electrical equipment and appliances. It was largely through the efforts of this league, Mr. McHenry pointed out, that 95 percent of the new homes in Toronto had been constructed with adequate wiring to Red Seal standards.

As he understood it, the aim of the O.M.E.A. was to promote adequate wiring in all the municipalities, and he did not see how this purpose could be better achieved than by the setting-up of a league for all Ontario on a similar basis to that which had proved so successful in Toronto. He felt sure that such a plan would receive the support of the Commission.

The mayor of North Bay, W. F. Stones, asked what was exactly meant by adequate wiring. Quite a lot of people in his district thought that once wiring had been inspected and passed, it was good enough for all the electrical jobs around the house.

This was just one of the reasons, Mr. McHenry stated, for some such organization as an electric service league. He then emphasized the distinction between inspected wiring and adequate wiring. The inspection service, he pointed out, came into the picture after a wiring

job had been completed, and was concerned only with the quality of the workmanship—in seeing to it that the work done by electricians conformed to the electrical code. Adequate wiring, on the other hand, continued Mr. McHenry, meant having wiring which provided enough circuits and outlets to permit the use of all electrical appliances and equipment, as and when desired, in a modern home. Summing up, the speaker stressed the fact that adequate wiring was largely concerned with quantity while inspection and code involved a consideration of quality and safety.

Guarding Against Over-Load

Some discussion arose as to whether or not Hydro inspectors were responsible for the number of outlets in the rooms of a house as a means of guarding against over-load by the simultaneous use of too many appliances. It was pointed out by James Harris of Kingston that inspectors had nothing whatever to do with the question of number of outlets, so long as the wiring was done according to specifications. This, apparently, according to further remarks by Mr. McHenry, might be a matter for the attention of a league such as that contemplated. Incidentally, he pointed out that safely available outlets in many homes had been more than doubled through adequate wiring programmes.

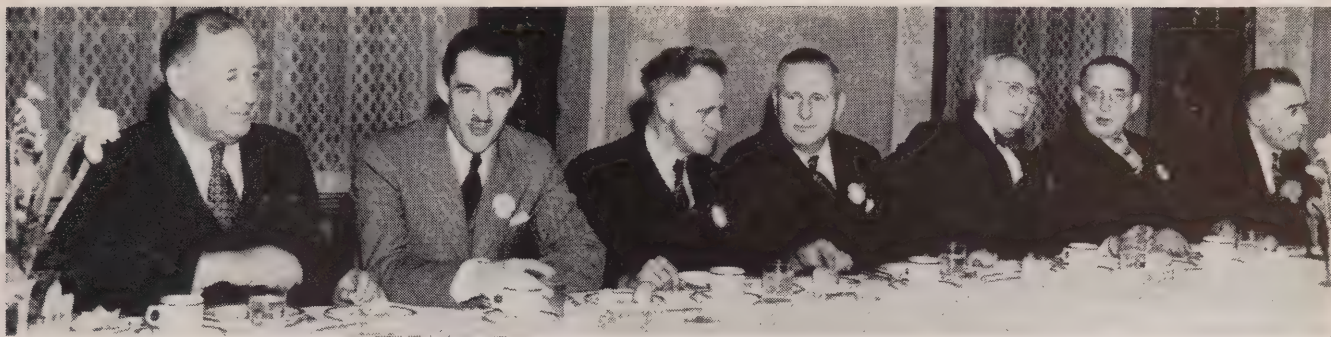
"It's about time we eliminated all this tripping over wires through having inadequate outlets," pronounced G. Austin of Dundas, who strongly supported the idea of an electrical service league for all Ontario.

It was planned that if the Electric Service League of Ontario were approved by the Commission, it would comprise membership from the following groups: The Hydro-Electric Power Commission of Ontario, the municipal Hydro-Electric systems, manufacturers of electrical equipment and appliances, distributors of the same and electrical contractors and dealers.

The responsibilities of the League would be something as follows:

It would undertake to administer and generally direct the adequate wiring and Red Seal programmes throughout the province in co-operation with the utilities, manufacturers, distributors, contractors and dealers. It would provide field supervision and training schools, and generally promote its aims and objects by publicity and advertising.

Under such a plan, each municipality would have the opportunity of developing an adequate wiring programme in its own area with the co-operation of the Electric Service League.



AT THE convention dinner (left to right)—G. S. Matthews, O.M.E.A.; W. R. Harmer, secretary, A.M.E.U.; C. J. Halliday, O.M.E.A.; F. A. Archer, treasurer (1945), A.M.E.U.; G. W. Gordon, O.M.E.A.; Roy Pierson, O.M.E.A., and R. J. Beaulieu, O.M.E.A.



GUEST SPEAKER Percy Philip and the Commission's secretary, Osborne Mitchell, discuss some aspects of world co-operation, while H. R. Henderson, O.M.E.A., listens attentively. At Mr. Philip's right are S. W. Canniff, past-president, A.M.E.U., the chairman, W. Ross Strike, K.C.; Hon. G. H. Challies; C. E. Pickering, O.M.E.A.; and Kenneth A. Christie, K.C.



O.M.E.A. GROUP, with the exception of F. E. Welker and G. N. Galloway, all on the 1946 executive. Front row (left to right)—J. R. Pattison; A. G. Jennings; Mrs. Glyn Kestell, secretary-treasurer; R. M. Durnford, president; W. Ross Strike, K.C., past-president; C. H. Moors; F. E. Welker. Second row—H. R. Henderson; G. N. Galloway; K. A. Christie, K.C.; Richard Thomson; G. Austin; W. Dixon; C. Austin. Third row—M. P. Duff; G. F. Hutcheson; A. P. St. Louis; R. J. Beaulieu; J. Irwin; J. B. Hay.

MUTUAL GOODWILL AND UNDERSTANDING ARE KEYNOTES OF O.M.E.A. SESSIONS

Hydro Achievements Reviewed By W. Ross Strike, K.C., In His Valedictory Address As Retiring President—Notes Consolidation Of Southern Ontario System And Brief Against Additional Taxation Of Hydro—Calls Upon Municipalities To Take Advantage Of Facilities At Lineman's Training School—Over 500 Delegates Attend Convention In Toronto—R. M. Durnford Of Sarnia Elected President

PROGRAMMES to implement plans for the extension and improvement of electrical services throughout the province received general approval and support at the annual convention of the Ontario Municipal Electric Association held in the Royal York and King Edward hotels in Toronto on March 5 and 6. Owing to travel restrictions during the last months of the war and the difficulty of securing accommodation for the delegates, there was no general meeting of the O.M.E.A. in 1945, so that this year's agenda included a review of the work carried out by the municipal commissions since 1944, as well as a discussion of the activities to which post-war Hydro planning is now definitely pointed.

Delegates to the convention began to arrive in Toronto on the afternoon of March 4. Plans had been made to handle early registration in the roof garden of the Royal York Hotel. Late arrivals were booked in at the convention floor next morning. By 10 o'clock on Tuesday, 500 delegates were reported in attendance.

Business meetings, luncheon and dinner assemblies, and a spice of entertainment kept the delegates busy until late in the afternoon of March 6. At the luncheons, and at dinner on Tuesday, there were guest speakers, and on these occasions, amid the gleam and glitter of napery and crystal, the convention seemed to take on a wider significance, symbolic of the country's desire to promote and foster a new prosperity based on mutual goodwill and understanding both at home and in the world at large.

Committees Set Up

Before the business sessions of the convention got under way, committees were set up to assure smoothness of procedure and to obviate irregularities. The credentials committee was composed of H. R. Henderson, Woodstock; A. G. Jennings, East York, and C. J. Halliday, Chesley. On the finance committee were James Halliday, Kingston, and P. R. Locke, St. Thomas. The resolutions committee comprised J. B. Hay, London; J. R. Pattison, Fort William; G. E. Findlay, Carleton Place; R. Pierson, Brantford Township, and J. R. Beaulieu, Penetanguishene.

Many of the recommendations submitted to the convention had already received careful consideration at the regular meetings of the municipal commissions and were adopted without division or debate. Routine business included the report of the treasurer and the finance committee of the association, which showed a balance in hand of \$4,955.45, exclusive of \$2,000 in interest-bearing war bonds; reports of the eight district municipal committees; and

the report of the Municipal Hydro pension and insurance plan.

Dealing with new matters, the most important resolution passed by the convention was in advocacy of an Electric Service League of Ontario. It was felt that an organization of this kind was essential to promote greater consumer benefits from the use of electricity through the provision of adequate wiring. Further details of the discussion on this subject are given elsewhere in Hydro News.

Another resolution in the public interest favoured the repeal of the wartime tax on electrical bills. This resolution will be embodied in a petition to the Dominion Government.

A report on amendments to the O.M.E.A. constitution was presented by Kenneth A. Christie, K.C., commissioner of the Toronto Hydro-Electric System. As a result of these amendments, which were unanimously approved, the objects of the association have been more clearly defined and certain ambiguities in procedure have been removed. Honourary officers of the O.M.E.A. will now have voting privileges.

In his valedictory address as retiring president of the association, W. Ross Strike, who was in the chair throughout the convention meetings, gave a comprehensive review of the recent achievements of the municipalities. These included the adoption of the plan to consolidate the Hydro systems of Niagara, Eastern Ontario and Georgian Bay in one Southern system to the advantage of all consumers of electric power, and an agreement with the Commission for the reduction of the ceiling price of electricity to \$39.00 a horsepower.

Linemen's Training School

Drawing attention to the training school for linemen recently established by the Commission in Etobicoke township near Toronto, Mr. Strike stressed the fact that, up to date, only four municipalities had sent men to the school. The Commission, itself, he said, had 150 handpicked veterans on its waiting list, and it was possible that this might have frightened off the municipalities. This was, however, he pointed out, a mistaken attitude. The Commission would be only too glad to include men from the municipalities if their names were sent in.

Reference was also made by Mr. Strike to the brief that had been drawn up by a special committee of the association against further taxation of Hydro. This brief had been submitted to the government, and, in pamphlet form, had been sent to the local commissioners and to the daily and weekly press of the province.

In conclusion, Mr. Strike stressed the heavy programme

(Continued on page 34)

"CAMERADERIE" At The Conventions



CHATTING WITH two representatives of the industrial end of the electrical business, (upper left), J. E. Teckoe of Galt, puzzles over a knotty problem. The Hydro News' photographer had to mount a chair to get this shot of the delegates (above) filing into the banquet hall. Ray Pfaff of St. Mary's (lower left) hands his completed registration form to the girl to be checked while C. H. Keeling awaits his turn.

PLENTY OF blotters were supplied at the registration desks—as more than a thousand delegates attended. Among those shown in this picture (right) are: P. B. Yates of St. Catharines, C. E. Hodgson of the H.E.P.C., O. R. Seiley of Paisley and S. W. Webster of Tillsonburg. The two pictures below give some impression of how the lobby of the convention floor looked about 9.30 a.m. on the morning of registration.



MANY REPORTS PRESENTED AT A.M.E.U. CONVENTION

Adequate Wiring, Working Agreements With Employees of Hydro Municipalities, Standardization And Uniformity Of Equipment Among Subjects Discussed

Adequate wiring and how best to sell its benefits to the consumer was one of the important subjects discussed at the recent convention of the Association of Municipal Electrical Utilities.

At these sessions many reports and papers were given, including study of working agreements with employees in the Hydro municipalities; the new flat rate water heater; standardization and uniformity of equipment, and many other important topics.

President S. W. Canniff, general manager of the Ottawa Hydro-Electric Commission, in his address of welcome, spoke briefly of the great achievements of Hydro in Ontario, and emphasized the importance of maintaining public confidence.

Standardization And Uniformity

There followed reports from the various committees. J. R. Sullivan reported on the Regulations and Standards Committee, and stated two matters had been submitted for consideration. The first was a question of meter shutters and standardized meter knock-outs for service switches. The consensus of opinion was that this committee would support any move for standardization and uniformity of equipment. The second matter was the question of interference with telephones by certain types of flat-rate water heater controls which operate by wired radio. It was decided that this question should be left in the hands of The Hydro-Electric Power Commission of Ontario, where it is now receiving attention.

G. B. Tebo of The Hydro-Electric Power Commission of Ontario, had the pleasure of introducing to the A.M.E.U. two charming new "models," Miss Hydromaid "for those who like 'em tall" and Miss Hydromatic "for those who like 'em short!" These two particular models happen to be proposed designs for automatic electric storage water heaters that the research department have been working on for some time. They have not yet been formally approved by the Commission. Mr. Tebo said, however, it is hoped that from among the preliminary designs a single model could be chosen which would become standard and thus bring the economics of mass production to a large proportion of the homes in Ontario.

These water heaters have a number of important features. They are built around a superior tank. The high efficiency strap-on type of heaters can be used anywhere in the province and can be replaced without disturbing the jacket. The duplex heater arrangement heats an initial quantity of water in one quarter of the time required by a single heater and increases by forty per cent the hot water available to meet a peak day's demands. It is hoped, Mr. Tebo stated, that by standardizing on a single model and by using modern production line methods of



REGISTRATION AND voting in the A.M.E.U. section were simplified and consolidated into one operation. Round the ballot box are: R. P. Darrell, H.E.P.C.; A. B. Manson, Stratford; W. D. Stalker and A. E. Fort of Simcoe; E. M. Sodden, Huntsville and H. A. Howard, Brantford Township.

manufacture and assembly, that this electric water heater will set a new standard for reliability, service and economy.

R. S. Reynolds, reporting on the Rates Committee, said that the committee had discussed the responsibility of the consumer for the corporation's metering equipment if that equipment were damaged or destroyed by fire. It was agreed that The Hydro-Electric Power Commission be asked to advise the municipalities to draw the consumers' attention to their responsibility according to the conditions in their contracts. On the question of double billing where there is more than one family in the same house it was decided to leave this matter for the present. Other questions discussed were church rates; the control of flat rate water heaters and rate adjustments.

The next report was read by R. S. King of the Accounting and Office Administration Committee. Meetings were held by this committee, notably in October, 1944, and again in October, 1945, in London. Some of the subjects discussed at these meetings were: "Depreciation Reserve—Its Proper Use," "Billing of Demand Consumers," "Operating Accounts," "The Hydro Employee and the Public", and "Inventory and Stores Accounting".

Adequate Wiring Programme

A. W. H. Taber presented the Merchandising Committee report, and stated that on the question of adequate wiring it was generally agreed that ample capacity and sufficient outlets in house wiring were a greater need today than ever before. Also that changes required in wiring to permit the use of added appliances was one of the greatest obstacles in the way of sales which result in load building. It was considered that the Electric Service League in Toronto would be the logical organization to promote an adequate wiring programme throughout the province. A recommendation was forwarded to the executive committee of the association recommending that the H.E.P.C. be asked to support an adequate wiring programme through-

(Continued on page 35)

DOWN THROUGH THE YEARS

ELECTRICAL HISTORY—PART II

By Herbert C. Powell
Toronto Hydro-Electric System

CONTINUING the Story of Electricity after the year 1800, let us look at three of the greatest men in the development of electricity.

Michael Faraday (1791-1867) devoted his life entirely to science at the Royal Institution in London, England.

William Thomson (Lord Kelvin) (1824-1907) was a professor at Glasgow University from age 22 to 75.

James Maxwell (1831-1879) served as a professor in several universities—Aberdeen, London, Cambridge.

In the interval of 116 years from the birth of Faraday in 1791 to the death of Kelvin in 1907, the electrical industry developed from a simple experiment to a huge enterprise supplying electrical energy and equipment in homes, hospitals, factories, communication systems, in various forms of transportation, and in almost every kind of human activity.

The boyhood development of these three men provides some interesting lessons for boys and girls of today.

Faraday's mother looked after his training up to age 13, so that everything he tried should be thoroughly done, and proper records made. His memory was trained by a thorough study of the Scriptures, and his obedience strengthened by strict attendance at religious duties in his devotional life. This love of the study of the Scriptures and attendance at Church continued steadily through his life of 76 years. He learned how to make things in his father's blacksmith shop. He served a seven-year apprenticeship

from age 13 to 20 with a bookbinder in London, and had access to many books from which he studied the science of his times, particularly heat, chemistry and electricity. He attended night lectures in London, especially those by Humphrey Davy, the notes of these lectures being very carefully recorded, and illustrated by well-made drawings. He joined a discussion group of young fellows for practice in preparing lectures and in public speaking. He took lessons in drawing and other subjects using every moment of spare time for study and development.

Faraday applied to Humphrey Davy for a position as secretary by presenting a most attractive summary of four of Davy's lectures. This brought an appointment in 1813 as Davy's assistant in the laboratory of the Royal Institution at the age of 21. He went on a long tour of Europe with Davy and his wife from 1813 to 1815, assisting Davy in many scientific demonstrations. They visited Volta in Italy, Ampere in France, and many other leaders in science. This was during the latter part of Napoleon's wars. Faraday's married life of 46 years was happy; his wife being interested in all activities spiritual and scientific. He was honoured by many societies and universities, but refused a knighthood from Queen Victoria. After twenty years of poor health he died in 1867 at age 76.

Thomson never went to school. He missed the great advantage of a mother's training because she died at an early age. However, his father, who was a teacher of mathematics and a professor at Glasgow University, educated him with great care so that he was far in advance of his age. He spent much time alone with his studies, and did not associate with others to develop the social courtesies



THESE INTERESTING and historic illustrations, showing Faraday lecturing and at work in his laboratory, are reproduced in the book, "A Tribute to Michael Faraday," by Rollo Appleyard.



JAMES CLERK MAXWELL AS A YOUNG MAN
(*The Master and Fellows of Trinity College, Cambridge*)

of his day. He matriculated at Glasgow University at age ten, and by that time he had already published twelve research papers. He graduated at age 16 from Glasgow University, then continued studies for another six years traveling among universities in England and Europe.

Thomson was called to Glasgow University at age 22 as a professor and he continued till retirement at 75. He received many honours from societies and universities. In 1866 at age 42 he received the honour of knighthood, and in 1892 he was raised to the peerage with the title Lord Kelvin. He retired as professor after 53 years in Glasgow University, and died in 1907, age 83.

Efficient Use Of Spare Time

Maxwell's mother died when he was eight years of age, so his father took charge of his training. Every means and opportunity were used to see how things worked, by visits to almost every kind of place where people were employed so that young Maxwell's observation, thinking and reasoning abilities were highly trained. He gathered information in many ways on many subjects by observing and by reading practical and scientific achievements, which demanded efficient use of spare time to keep up with the swift pace of discoveries and experiments. His father thoroughly explained each idea and discovery as far as possible. Maxwell liked to play with boys of his own age and usually acted as a leader in constructive games. He loved to show working people how to understand their

work better. He found the study of the Scriptures very helpful in his memory and recreation. He memorized the 176 verses of the 119th Psalm, also many other passages. He attended Edinburgh Academy from age 10 to 16, then 3 years at Edinburgh University where he carried on many varieties of research: matter, space, time, force, sensation, light, color, heat, electricity, elasticity, strains in transparent materials such as gelatine, etc. At age 19 he went to Trinity College under Hopkins in Mathematics. He joined a group of 12, called the Apostles, who wrote essays on philosophical themes for mutual instruction.

Built Cavendish Laboratory

Maxwell graduated from Cambridge at age 23. Two years later his father died just about the time he received an appointment as professor at Aberdeen where he remained three years. He went to King's College, London, for five years, but his health failed and he rested 6 years. In 1871 he was called to Cambridge to build and manage the new Cavendish Laboratory. After nursing his wife

PICTURES OF Maxwell and Lord and Lady Kelvin, reproduced on this page are from the book, "Men Of Science."



LORD AND LADY KELVIN IN CORONATION ROBES

during a long illness while active in a busy life, he became seriously ill himself, and died in 1879, age 48.

The scientific work of each of these three men was most outstanding.

Faraday was known as assistant to Davy in the Royal Institution from 1813 to 1825 when he was made Director. He worked from 9 a.m. till midnight, giving lectures in evenings, and experimenting in research projects. (Davy was knighted in April 1812, married one week later, then he and his wife began to climb the social ladder, so that scientific work was neglected). After the tour of Europe 1813 to 1815, Davy returned, and with Faraday's help, developed the miner's safety lamp in 1815 which allowed the lamp to burn inside of a wire gauze without exploding the fire-damp atmosphere of a mine. Davy spent less time in the lab, took sick in 1825 and died in 1829 at age 51.

Discovery of Electromagnetic Induction

Faraday followed up the discoveries of Cavendish (1731-1810), Coulomb (1736-1806), Oersted (1777-1851), Ampere (1775-1836), and others. He worked out the relations between electricity and magnetism resulting in the discovery in 1831 of electromagnetic induction. This was an entirely new method of producing an electric current, and became the basis of the electric generator and the electric motor. Oersted and Ampere had obtained magnetism from electricity. Faraday produced electricity from magnetism, and also obtained another electric current by induction from an existing electric current. A current of electricity is induced in wire conductors when they cut the magnetic lines of force when moved through a magnetic field. These results were reported from time to time for other scientists to use. A description of electricity and magnetism will be found in the Ontario High School Physics.

Thomson's work at Glasgow University included requests for instruments and methods of measuring and controlling electricity. So he invented measuring instruments, many varieties of electrical equipment, also apparatus for use in telegraph and submarine cables which made it possible to transmit messages over wires and cables. He experimented with electric oscillations and alternating currents. The total of his inventions and researches run into hundreds from which he derived a good income. In 1890 he served on a committee to advise on the design of the generating plant at Niagara Falls, the first unit of which began operation in 1895 at 25 cycles.

Theories Of Electric Waves

Maxwell's great work in electricity was his remarkable mathematical treatment of Faraday's discoveries in which he made equations that summarized the results of researches of Coulomb, Oersted, Ampere, and Faraday's lines of force and laws of induction. Maxwell studied Thomson's electrical oscillations, then worked out theories of electric waves which were proved correct by Hertz in 1888 and used by Marconi and others in wireless and radio. Maxwell published in 1873 two volumes, "On Electricity and Magnetism," which together with his other achievements, place him in the front rank of scientists of all time. His design, construction and operation of the Cavendish Laboratory at Cambridge was a remarkable success. He was followed by three very brilliant



MICHAEL FARADAY, who assisted Humphrey Davy in developing the miner's lamp, is shown here with his wife Sarah. Faraday received many honours from societies and universities, but refused a knighthood from Queen Victoria.—PICTURE OF Faraday and his wife is from the book, "Men Of Science."

successful directors of the Laboratory, Rayleigh, J. J. Thomson, and E. Rutherford, who developed the electron tubes which made radio and other electronic systems possible.

These stories of Electrical History are designed to be informative not only to adults but to help boys and girls, parents and teachers to make good use of home and school opportunities to "Make yourself best in your line." Watch for the next part.

W. E. SPENCELEY DIES SUDDENLY

Born in London in 1893, WILLIAM E. SPENCELEY, a draftsman with the station section of the electrical engineering department of The Hydro-Electric Power Commission of Ontario, died suddenly at Toronto Western Hospital on March 17.

Enlisting in the First World War as a sapper, the late Mr. Spenceley saw service in both France and Belgium and was gassed in 1917.

He received his drafting education at Central Technical School and joined the staff of the Commission in 1925. The deceased is survived by his widow and one sister, Mrs. A. Seager.

Following the service on March 20, interment took place at Park Lawn cemetery.

MESSAGE TO THE HYDRO FAMILY

By R. M. Durnford, Sarnia

President, Ontario Municipal Electric Association

THROUGH the courtesy of the Hydro News I have been given this opportunity of extending my sincere thanks to the wide circle of O.M.E.A. members who were instrumental in placing me at the head of our Association.

The past history of the association, the cause which it champions, and the illustrious line of leadership it has enjoyed all serve to elevate the honour attached to being its president. I can only hope to discharge the responsibilities of the office with the assistance of its able executive and the co-operation of the members.



The external contacts of the O.M.E.A. are largely with the Ontario Hydro-Electric Commission and the A.M.E.U., and the closest co-operation would seem to be essential if the more pressing problems on the horizon are to be successfully solved. We have

one goal in common, and that is the perpetuation of the great institution we know as Hydro.

Of late years Hydro has developed a new function. It has become the true "index" of the state of the economic health of our province. Those who attended our convention and heard the several references to our present-day load conditions and the descriptions of the plans under way for further large power developments must have been filled with optimism about the future of both Hydro and the Province of Ontario.

I would like to make a brief reference to some of the practical considerations that will face our Association and which it is hoped will receive the most careful attention of the members.

FIRST, there is the programme for "Adequate Wiring", taken home from the convention with every expectation from the new executive that the members will translate it into action. This programme is based on sound principles and is designed to pave the way for greater use of electricity in Ontario homes with all which that implies.

NEXT, is the question of Public Relations. Here is a field that calls for planned effort in every municipality. We cannot expect the new generations to acquire the keen appreciation of what Hydro is, and understand its unique function, unless they are informed, and this calls for a continuous process of enlightenment. The H.E.P.C. is promoting this idea but it should be amplified in every community by local efforts on the part of the Commissions and their individual members.

THEN there is the question of encroachment by those who would wilfully distort our rate structure to the point of making it a tax gathering device. Our association has dealt with this in the past and will exercise eternal vigilance in the future.

FINALLY, I do not propose to enlarge on the great

RECALLS EARLY DAYS OF SIR ADAM BECK

Professor Fred Landon Addresses

O.M.E.A.-A.M.E.U. Luncheon

Gathering

Early days of the late Sir Adam Beck, "The Father of Hydro," were recalled by Professor Fred Landon, former newspaperman, author, historian and vice-president of Western University, London, Ontario, when addressing a joint convention luncheon of the O.M.E.A. and A.M.E.U.

Sir Adam's memory, the speaker declared, should not be allowed to grow dim in the minds of the people of Ontario.

Professor Landon said that the former Hydro chairman was born at Baden, Ontario, and had inherited a keen mechanical aptitude from his father.

The sanatorium which Sir Adam built at London, continued the speaker, was motivated by the same philanthropic attitude that the late president Roosevelt had shown when he sponsored "Warm Springs," Georgia, as a hospital for polio victims.

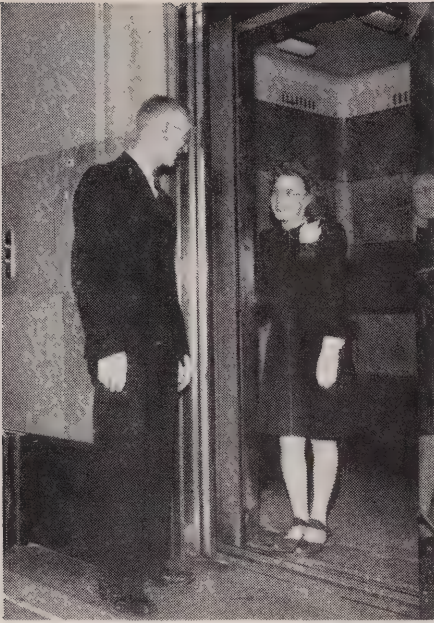
When Hydro was still a "juvenile," proceeded Professor Landon, it was attacked politically and that had aroused Sir Adam Beck to carry on a public-spirited campaign on behalf of the ideals and dreams that he cherished for "power at cost". At one particular meeting where he was speaking in 1913, Sir Adam said, in part:

"I am the servant of the people. My greatest joy is to make the lot of everyone within the range of my work and influence brighter, and better. If I have helped to make the goods of the merchant and the home of the poor safer from fire, I am glad. If I have helped the housewife by making electricity her servant, I have my reward. If I have helped the farmer to make life more attractive to the boys and girls on the farm, then I have not laboured, nor have you co-operated with me, in vain. If I have helped to save the life of any afflicted child, I am happy."

problem which is to be up soon for consideration by the 25 cycle territories in Southern Ontario. We have the assurance of the Ontario Commission that a thorough study is being made which will in due course be placed in the hands of the association and the municipalities. It need hardly be said that this report will receive the most careful study by everyone, and especially by those who would be directly affected by a conversion programme. As president of the O.M.E.A. I have one request to make, namely, that the affected members live through the expectant period of the next few months with an open mind. The careful study being given to all phases of this problem by the Ontario Commission will provide the foundation for local studies in the municipalities and for group studies by the O.M.E.A. Districts.

In closing this message I wish to extend to the Hydro News congratulations on the fine way they are serving the Hydro family, and particularly the splendid help they are continually rendering to our association.

PUSH BUTTON TRANSIT



ASSISTANT STARTER
Nelson Sunderland and
operator Nancy Cameron
(upper left) talk things over
while waiting for business.

SOME OF the noon-hour
crowd pouring out of the
four H.E.P.C. elevators in
the administration building.
These cars make approxi-
mately 2,000 trips a day.



By GRACE J. CARTER,
Assistant Editor, Hydro News

THIS is an inside story—the story of a push button transit system which makes 2,000 trips a day in the Commission's administration building in Toronto, and serves three quarters of a million people a year.

When Hydro employees or visitors step into any one of the four elevators in this building they probably do not know that they are being conveyed to their respective floors in cars which are controlled by a mechanical brain and which rank among the most modern installations in Canada today.

In the daily operation of these elevators the emphasis is definitely on safety, nothing being left to chance.

To transport the 900 employees in the Commission's head office to the various floors, and at the same time keep up a high standard of efficiency, particularly during the peak periods, presents many "headaches" to Manager Fred. A. Robertson and his staff.

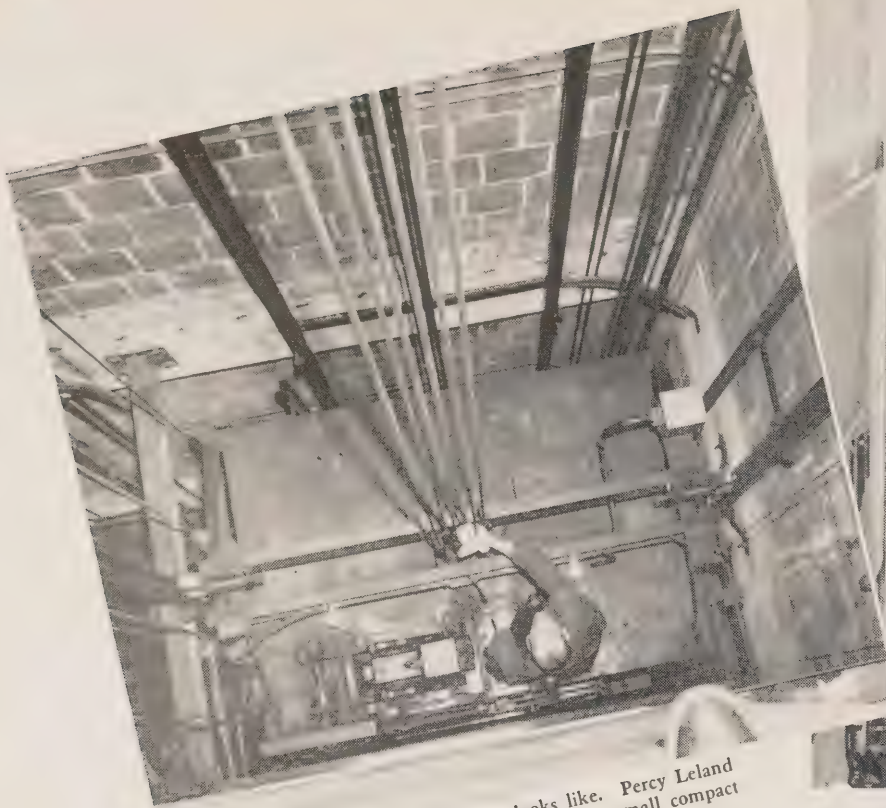
One of the problems that is causing considerable trouble at the present time is the "coke habit." Interpreted,

this means, certain members of the staff come into the building, go to their respective departments, take off their hats and coats and then immediately take the elevator downstairs to make purchases at the stand operated by the Institute for the Blind on the ground floor. It can be readily seen how this affects the elevator schedules, both on the extra number of passengers for the uptravel and the numerous down calls that the operators have to answer at the same time.

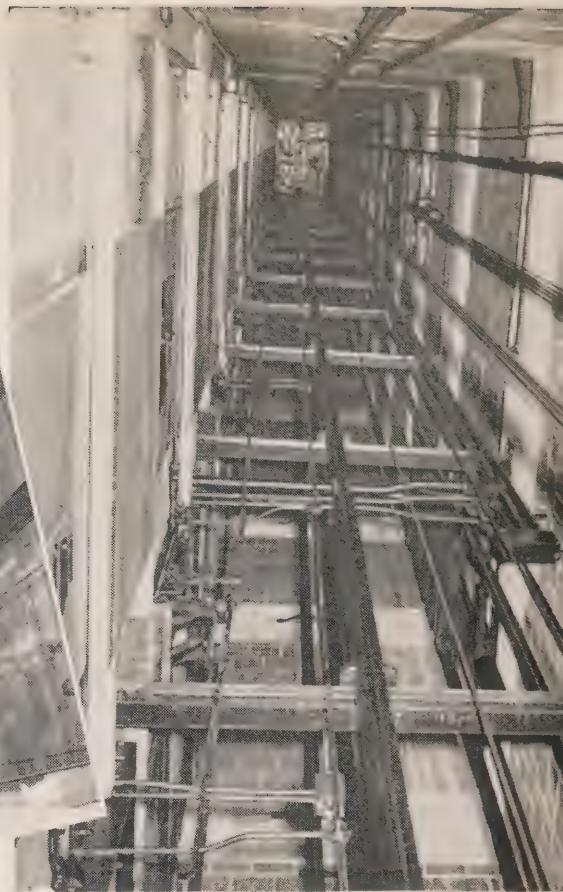
The "coke," or "coffee habit," as it is known in some buildings, has grown to such proportions, in some cases adding over 30 per cent to the elevator load, that recalculations of peak loads have had to be made and adjustments necessitated in the dispatch system, not taking into account the disruption of schedules in the offices themselves. Obviously, it was stated, a little forethought on the part of the individual would go a long way to clearing up this difficulty.

The efficient operation of elevator service covers a "lot of territory" and Hydro News had the privilege recently

(Continued on page 22)



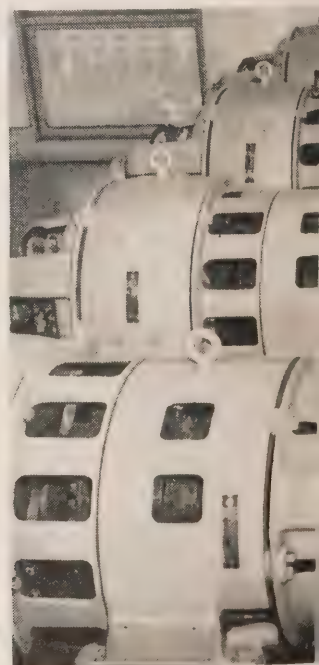
THIS IS what the top of an elevator looks like. Percy Leland is shown cleaning the hoisting cables. Note the small compact door operating motor and the two service lights.



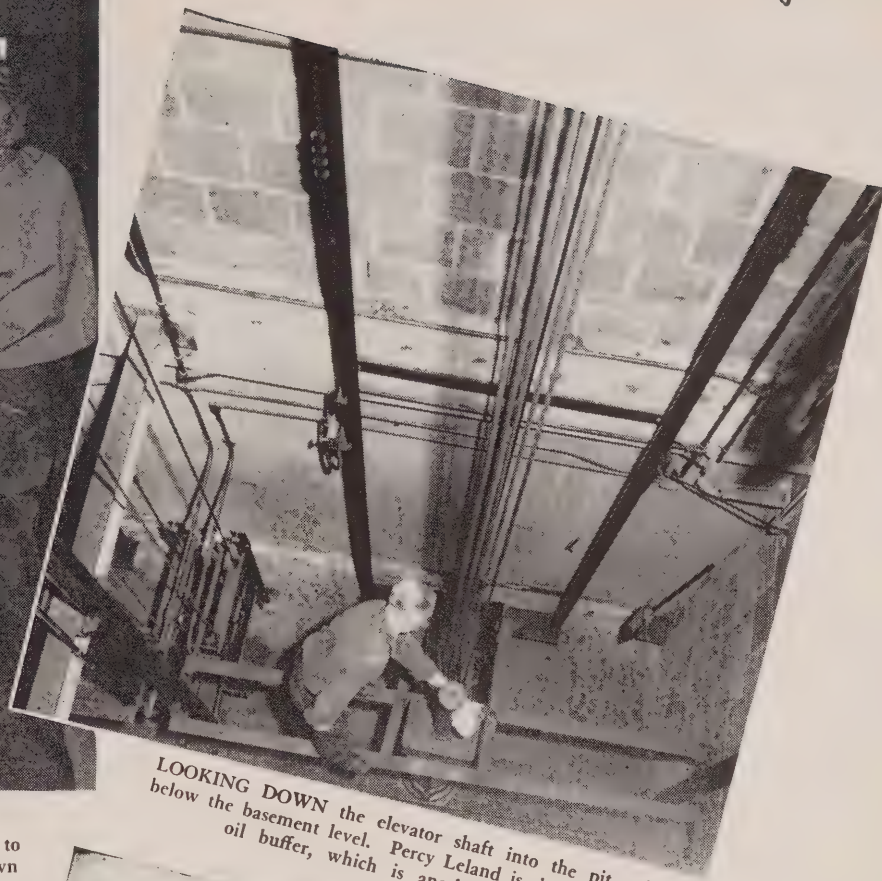
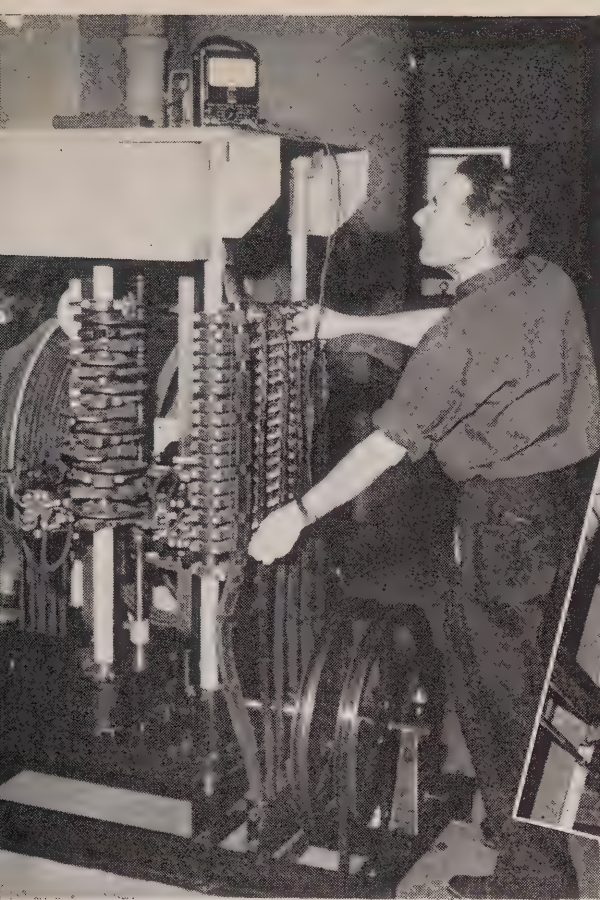
LOOKING UP the elevator shaft showing the door operating mechanism and wiring conduits. When the shot was taken, the car was at the twelfth floor.



MAIN CONTROL panel, or the elevators' mechanical brains, is located on the eighteenth floor. Reg. Boustead watches the relays while telephoning to the operator in one of the cars.

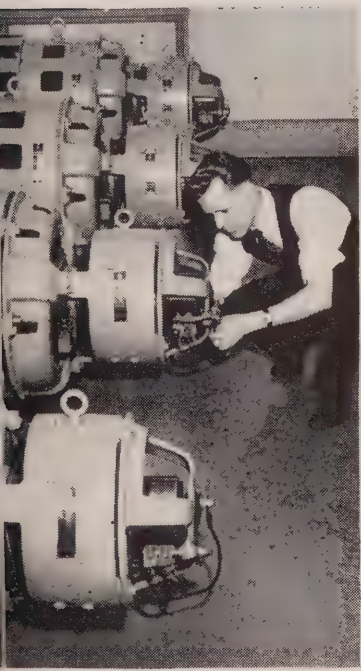


HERE ARE the four motor generators. Each set is driven by a 55 horsepower motor with brushes on the commutator.

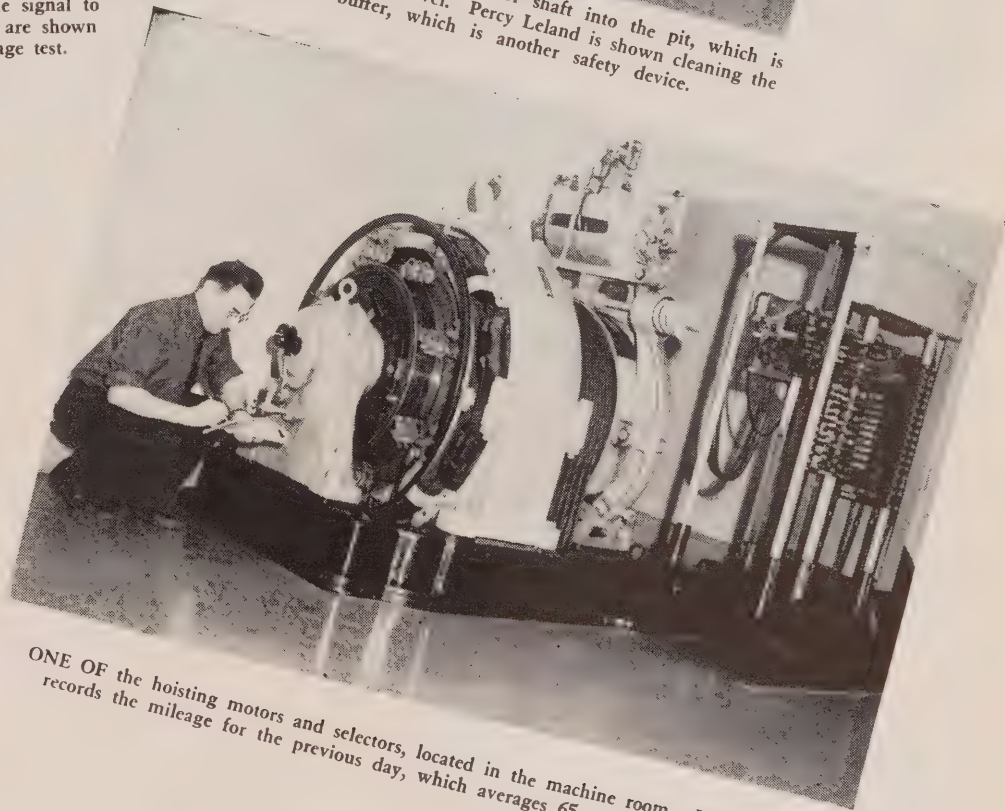


LOOKING DOWN the elevator shaft into the pit, which is below the basement level. Percy Leland is shown cleaning the oil buffer, which is another safety device.

THIS SELECTOR automatically picks up the signal to stop and level the car. The levelling cams are shown on the right. Herb Cavalier takes a voltage test.



sets, one for each elevator. Each motor. Reg. Boustead adjusts the of the excitors.



ONE OF the hoisting motors and selectors, located in the machine room. Herb. Cavalier records the mileage for the previous day, which averages 65 miles for the four cars.

(Continued from page 19)

of finding out just what makes the H.E.P.C. wall cars "tick".

Let us start with the operators, six neatly-uniformed young ladies in all. Incidentally, girls have been operating the four elevators in the building's new section since March, 1941, and have proved to be satisfactory in every way. These ladies wear fine quality uniforms which were specially designed for them by a well-known English designer. In winter they wear a dark green dress trimmed with buff braid with the Hydro crest on the pocket. And in summer they have a buff coloured uniform trimmed with dark green. These colours were carefully chosen as best suited to the surrounding colour scheme of the interior of the building, which is considered to be one of the most modern in Canada.

When an operator leaves, or is transferred to another department, the uniform is altered to fit her successor. The adjustments are made overnight by the Commission's



JIM CLINE (left) of the H.E.P.C. operating department, acts as consulting engineer when technical advice on the elevators is required. Here he discusses a blueprint on elevator circuits with Reg. Boustead.

"housekeeper" or inspector, who is also an excellent seamstress. This, of course, is a great convenience as it eliminates waiting two or three weeks for a new uniform to be made.

Before an operator is permitted to run an elevator on her own, she is given a period of instruction in the actual operation, and must prove that she knows what to do in cases of emergency.

Panel Tells Location Of Car

The starters or dispatchers are also in uniform, and one of these men is on duty at all times during the day. In rush hours he may be seen directing the elevators to best accommodate the crowds. This is accomplished by automatic control through carefully watching and operating the position indicator panel of 121 lamps which is located in the main hall about eight feet above the floor. This

panel tells at a glance the location of each car. It also has a set of red and green numbers which indicate the signals that have been pressed on the individual floors. This, of course, does not indicate the number of passengers waiting at each floor.

Briefly, the mechanical operation of an elevator is this: when the key is turned in a car, this starts up a 55-horsepower motor generator set in the machine room on the eighteenth floor. On one end is an exciter and on the other end is the main generator. The exciter feeds power into the control panel. This in turn feeds power into the main generator, and this main generator, connected through to the elevator motor, gives the different speeds and directions.

For the self-levelling feature, the cars are connected to the machine room by steel tapes. This operates a set of cams, which in turn operates the contacts.

In order to speed up the service during rush hours the elevators run only to the highest call registered, whereas during the rest of the day they go from the ground floor to the sixteenth. During peak periods the dispatcher can signal a car to leave a floor without the operator waiting for her customary automatic dispatch lights, and bring the elevator right down without making any stops for the various hall signals.

And by the way, incessant pushing of the buttons will not bring an elevator any faster. As a matter of fact, when some impatient individual keeps his hand on the button, it sometimes vibrates the relay to a point where it drops out and cancels the signal. Actually what happens when a button is pressed in the hall, is that a relay in the machine room closes. This gives a signal to each selector and the first car to receive this signal stops, and automatically resets the relay. It can be readily appreciated that all calls are automatic and, therefore, the operator has no way of knowing that there is someone waiting on any particular floor. She does not hear a buzzer inside the elevator and has no way of knowing where the car will stop for outside calls. She records her inside calls, of course, by pressing the individual floor buttons as the passengers board the car. If the elevator is full, the operator can, by holding down a special button, which is very hard on her fingers, bring the car right down to the main floor without answering any calls on the way.

The average time for a person to wait after pressing the button should not exceed 32 seconds, which is the dispatching time between cars on both top and ground floors. Should several calls come in at one time, however, the wait may be as long as one minute. This, of course, may be longer at rush hours. Minor delays are caused when the wrong button is pushed—a down signal being given when the person wants to go up, or vice versa. This holds up the car while the doors are opened and closed.

As a matter of interest, a non-stop trip from the ground floor to the sixteenth takes approximately twenty seconds. This includes closing and opening the doors and covers a distance of approximately 200 feet.

The interiors of the elevators are lined with birds-eye maple, trimmed with ebony. Their dimensions are approximately 5 feet, 6 inches long, 7 feet, 8 inches wide and



OPERATORS RETA Ryan, left, and Ruby Aiken stand by waiting for instructions from the dispatcher. The girls' uniforms were specially designed by a well-known English designer.

BETTY CHANTER (lower right) demonstrates how the emergency doors can be used by bringing two cars to the same level. Up to the present, these emergency doors have only been used for demonstration purposes.

7 feet 6 inches in depth, and they each weigh approximately one-and-a-half tons. They each carry a maximum of twenty persons or approximately 3,500 pounds.

Significance Of Lights

A panel of various coloured lights inside the car is a never-ending source of interest to the passenger, and each light has a meaning all its own. The lower amber lamp shows that the motor generator is running at full speed. The blue one means that the car is ready for up-travel. When the upper amber or loading light comes on, this tells the operator that her car is the next one to leave the main floor. Green is the signal for the car to leave the ground floor, and the red to leave the sixteenth floor. The white light is the signal that someone in the basement wants a lift.

Each car is equipped with an automatic telephone; an electric fan; a flash light which is checked every morning to make sure that it is in working order; and a long stick



STELLA HOWAT is shown using the automatic telephone, which is part of the H.E.P.C. elevator equipment, while she keeps her eye on the cab control panel.

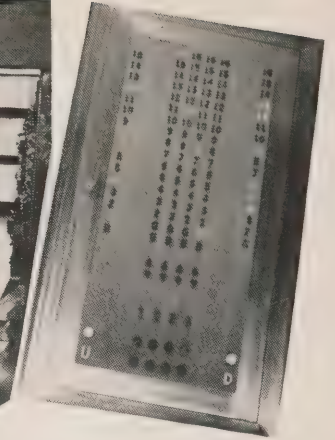




A GENERAL view (above left) of the machine room on the eighteenth floor of the administration building. Jack Thompson (right) H.E.P.C. building superintendent, is shown discussing some knotty problem with Reg. Boustead.

for reaching doors should the car stop between floors. On the side is an emergency door which can be opened and if necessary another elevator brought opposite to enable passengers to transfer. Up to the present time the emergency doors have not been used, except for demonstration purposes.

Travelling 600 feet a minute, the four H.E.P.C. elevators average 2,000 trips a day, and carry in the neighbourhood of 750,000 persons over a yearly period. During the five years they have been in operation, there have been no serious accidents and only a few trivial mishaps have caused passengers minor delays. But this fine record is not just due to fortunate circumstances. It is the direct result of constant vigilance on the part of the highly trained administration personnel. Every piece of equipment, including the 293 relays and over 2,400 movable contacts, are watched very closely. And there are many safety devices as well. For instance a car cannot start until the doors are closed. There are six $\frac{3}{8}$ inch hoisting cables which are made of steel with oil soaked hemp inside which have a total breaking strength of 126,000 pounds. If a car should run away, a governor located on the seventeenth floor, would stop the elevator within six feet after reaching the speed set. Just supposing a car should run to the bottom of the shaft, not reaching the speed required above, it would hit a buffer in the pit, which is below the basement level, and would stop without even spilling a glass of water. This test has actually been carried out. All safety devices are tested before a car is put into passenger operation and



TRAFFIC, OR position indicator panel has 121 lamps and is located in the main hall about eight feet above the floor.



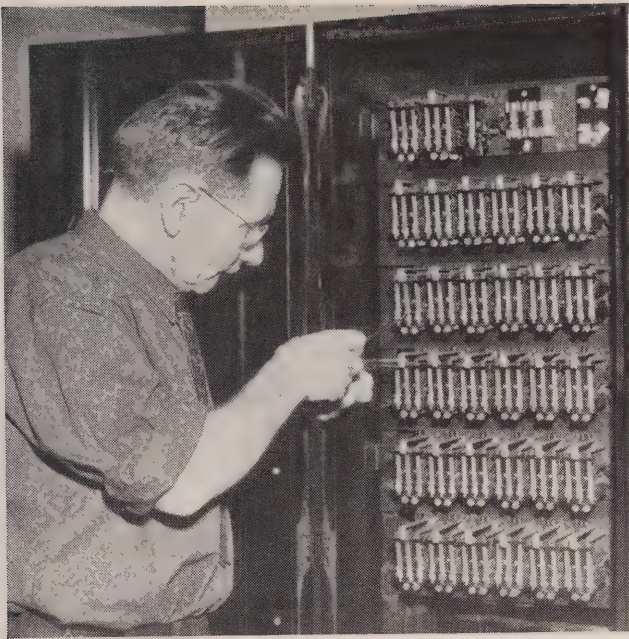
CHIEF STARTER M. M. Morrison (above) regulates the starting control panel while watching the traffic, or position indicator panel.



FRED A. ROBERTSON (right) H.E.P.C. administration building manager, who admits there are plenty of "headaches" in maintaining a high standard of efficiency in the elevator service.

checked periodically thereafter. In this connection, inspections are made periodically by insurance company inspectors, as well as by the city of Toronto.

It is very seldom that a car stops between floors, as any trouble is usually detected before the elevator leaves the floor. But should this happen, the operator is trained to first see that the motor generator is running (lower amber light on panel). If this were not running, she would try to start it in the usual manner. If this failed, or if the generator were running and the car failed to start, she would unload the passengers, if at all possible. If this were impossible, she would telephone the starter, giving her location and the number of passengers, and then await



HERB. CAVALIER makes adjustments to the hall button relays. Notice the numbers for each floor.

instructions from him. The sticks provided in the elevators are for reaching the doors when between floors, and are only used as a last resource.

On Duty In Machine Room

Another reason for the safe and efficient operation of the H.E.P.C. elevators is the fact that there is a man on duty in the machine room on the eighteenth floor every day from 8 to 9 a.m.; 11.45 a.m. to 1.30 p.m.; and from 4.15 to 4.45 p.m. His job is to visually check all the equipment; record the elevators' mileage for the previous day, which average 65 miles, and do minor cleaning and oiling. And if anything should go wrong, he is right on the spot to correct it in a minimum of time. These men have become so familiar with the sounds in the machine room, and they are varied and numerous, that if machinery trouble occurs, they can very often distinguish the irregular noise, locate it and make the repairs before anything serious happens. It is also these technicians' boast that the penthouse floor is kept so clean and shiny that any piece of equipment, even a small nut, that has fallen out of place is noticed immediately and put into position.

Adequate Operation Assured

It will be readily seen that having men on the staff who are capable of servicing the elevators at all times is a distinct advantage and ensures very adequate operation.

Another mark of efficient maintenance is the supply cabinet located on the eighteenth floor. In this cupboard

are various small pieces of equipment which are kept in clear glass jars, similar to the ones your mother uses for jam. Obviously, this makes for speed in selecting the particular gadget needed when a quick repair is necessary.

Nothing Left To Chance

Most of the routine maintenance work on the elevators is done after regular office hours. As in all phases of the Hydro's elevator service, nothing has been left to chance, and the servicing of the equipment is done in a systematic manner. It is considered that some parts require servicing only once a year, while others need attention every week. A well-planned record of all equipment is kept in an index book. In this way, there is no guess work as to whether a part needs attention or not, it just comes in the routine, while a daily record is kept of any additional servicing or adjustments. And in this connection, a weekly report is compiled of the work done and the amount of time spent.

Individual Co-operation Essential

These facts give some idea of the thought, time and effort spent in assuring the safe operation of the H.E.P.C. elevators. Co-operation on the part of the individual employee in not using the rush hours to make unnecessary trips, and in remembering that one push of the button is sufficient to summon a car, will help immeasurably in maintaining this vital service at its present high level of efficiency, Mr. Robertson told Hydro News.



ANOTHER INDICATION of efficient maintenance is the supply cabinet containing small pieces of equipment in glass jars. Reg. Boustead sees at a glance just what he needs to make a quick repair.

PATIENCE, WISDOM, COURAGE REQUIRED IF USE OF "DYNAMITE" IS TO BE AVOIDED

**Percy Philip Of New York Times Warns O.M.E.A.-A.M.E.U. Gathering Not
To Put Too Much Faith In Blueprints Of The Future Which
Exclude Possibility Of Another Corporal Hitler.**

A SCOTTISH-BORN American newspaperman who lived in Paris until "Mr. Hitler pushed me out in 1940," stepped up to the lectern in the Concert Hall of Toronto's Royal York hotel shortly after 8 p.m. on March 5 and told a joint convention dinner gathering of O.M.E.A. and A.M.E.U. delegates that: "We must not put too much faith in blueprints of the future which exclude the possibility of another corporal Hitler."

The speaker, the widely known Percy Philip, Ottawa correspondent of New York Times, who came before his audience as "a kind of day-by-day historian of human endeavour," quietly and solemnly expressed a number of opinions based upon his long years of experience in recording the passing panorama of events in Europe and in other parts of the world.

Must Not Quit

"If we are to get out of this log-jam in which we are," he said at one point, "and want to avoid having to use dynamite, we must go at it patiently and strongly. We must not quit. The job to be done of directing the wild forces of the human heart and even wilder ideas of human head into peaceful, productive channels is enormously more difficult than building a power system or even than making an atomic bomb. It will take patience and wisdom and understanding and constant public support and as much courage as any of our troops and airmen and sailors ever showed."

Mr. Philip counselled his audience not to become too passionate about political systems, either of the kind that keep their fingers crossed and hope for the best or those others which want to take complete control of every man's life "under a superman system of civil servants, in a way that will keep us all clicking in position like so many valves and pistons until we wear out."

Then he made this observation: "Human life as I conceive and see it, in the works of Shakespeare, in the music of Beethoven, in the poetry of Shelley, in the sacrifice of the men who fought at Caen and Falaise, aye, and in the dams you build, and the columns of a newspaper, is something that is grander than a disciplined procession from the cradle to the grave. But if we are to get great results from it, it must be canalized by loyalty, by trust, by generosity and by sacrifice. It is not discipline that the world needs but self-imposed order. If we can get that we shall have peace and hope and laughter and electric lights burning brightly in every home."

Recalling the time he had spent in Paris, Mr. Philip said that he could have stayed, as some of his friends did, "behind barbed wire and meditated on how absurd the whole business was—that a crazy, uneducated, unknown son of the people, an Austrian corporal, should have got

the whole world into a gigantic war that changed the course of millions upon millions of human lives, and has left the continent of Europe covered with ruins and dead."

At another point, the speaker told of the time, back in 1923, when his paper had sent him to Munich "to try and find a fellow called Hitler." It was not an easy job because he (Hitler) was hiding most of the time "under a bed in Putzi Haenstaengel's house." One evening, however, Mr. Philip said, an old German friend took him to hear Hitler speak "in a kind of a garage where there were a few thousand people." There were half a dozen other speakers who did not seem to get anywhere with the crowd. "And then," continued Mr. Philip, "the little Austrian began. It was the damndest nonsense you ever heard, but soon you could feel the audience beginning to respond. The appeal was to those two deepest emotions in every man—his pride in his country and his political passions. In almost every sentence he used the word 'Deutschland,' building it up until these people were half crazy with excitement. They were hungry, too. Hungry, because the food blockade had not long been lifted and these were the days of great inflation when you had to pay millions of marks for a dinner, and they were hungry for order, loyalty and self-respect. When we left the place, my old German friend asked me: 'Well, what do you think of him?' I had heard lots of that kind of oratory at Hyde Park Corner and I answered flippantly: 'The man's a lunatic.' But the old German knew better than I did. 'Yes,' he said, 'he is crazy but I am afraid of a crazy man who speaks so well to empty stomachs.'"

Woods Full Of Crazy Corporals

Pausing briefly and removing his glasses, the speaker looked in silence at his audience for a few seconds and then he quietly remarked: "Ladies and gentlemen, I would remind you, who have eaten so well, there are more empty stomachs and empty hearts in the world today than even at the end of the last war, and as I said already, the woods are full of crazy corporals. It would seem a wise beginning to see to it that everybody gets food. There is no greater beggetter of political hysteria than hunger."

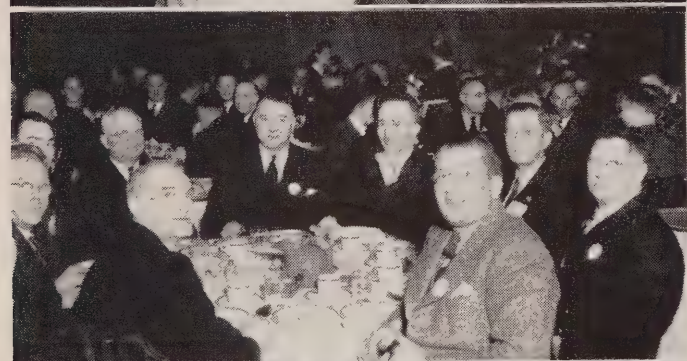
W. Ross Strike, K.C., retiring president of the O.M.E.A., presided over a gathering which taxed the Concert Hall to capacity. Head table guests included Hon. George H. Challies, vice-chairman of The Hydro-Electric Power Commission of Ontario; Osborne Mitchell, the secretary; S. W. Canniff, Ottawa, retiring president of the A.M.E.U., and R. J. Smith, Perth, the new president; R. M. Durnford of Sarnia, the new president of the O.M.E.A.; W. R. Harmer, Toronto, secretary, A.M.E.U.; Dr. W. J. Chapman, St. Catharines; R. T. Jeffery, chief municipal

(Continued on page 35)

"CAMERADERIE" At The Conventions



J. L. STONEHOUSE, (left) chairman of Forest Public Utilities Commission, who has represented his town for over thirty years as a Hydro commissioner. The head table group includes J. B. Hay, London; Dr. Thomas H. Hogg; Professor Fred Landon, guest speaker; W. Ross Strike, K.C.; S. W. Canniff, Ottawa; H. R. Saunders, mayor of Toronto; Clark Keith, Windsor; and Controller McCallum, Toronto.



BELIEVE IT or not but six non-smokers are included in this group (above) comprising: Ham Gardiner, Toronto; Charles Austin, Chatham; R. M. Durnford, Sarnia; R. P. Manning, Dunnville; H. J. Muchleman, operating engineer, H.E.P.C.; J. A. Blay, assistant director of promotion, H.E.P.C.; Thomas Barnes, Niagara Falls; P. E. Battram, Sarnia; and George Austin of Dundas. Among those at the table below are: J. L. Stonehouse, E. W. Smithson, K. W. MacDermott, W. C. Dymond, George Cousins, all from the H.E.P.C., and Stan Ellerker, Forest, and his son, Roy.



"LIGHT" COSTUMES OF CARRIER CREW HELPED PLANES MAKE SAFE LANDING

**Important Wartime Developments In Field Of Lighting And Their
Peacetime Application Discussed In Address By D. W.
Atwater At A.M.E.U. Convention**

BY wearing "light" clothes made from fluorescent fabrics milady may be able to discover new ways in which to reflect a radiant personality. As a matter of good form and good taste, however, she may have to consult her nearest illuminating engineer as well as her modiste.

Such a conclusion might be drawn from the interesting address delivered at the A.M.E.U. convention by D. W. Atwater of the Westinghouse Company, New Jersey, on March 6.

This paper threw considerable light upon a number of important wartime developments whose peacetime applications are designed to contribute new benefits and impart still greater zest to life and living in the days ahead.

Arresting demonstrations and slides, presented by Mr. Atwater, focused attention upon many types of illumination from phosphorescent powder, fluorescent fabrics and ultra violet sun and infra red heat lamps to bacteria lamps, and street lighting.

Glow With Light Of Their Own

He recalled, among other things, how deck hands on aircraft carriers had worn fluorescent fabric costumes which served as guides to plane pilots at night. Under the influence of the black light these fluorescent fabrics actually become light sources and are very brilliant.

Squares of these brilliant fabrics had also been used extensively during the war to mark the borders of flying fields. One of the peacetime uses for such materials, he said, would be for the stage.

Discussing the use of light during the war, Mr. Atwater stated that two of the major problems had been the proper illumination of war plants and conversely the elimination of light in blackouts and dimouts. In the process of working on these problems, he said, the lighting research workers had learned many valuable lessons.

Lights For Rescue Work

There were a variety of other needs that had to be filled for war purposes. One was to produce lights for rescue work at sea on the life rafts. First, they produced a glow lamp that can burn almost indefinitely on a small battery. However they found that the time element was not so important because rescues had to be made within a few days or they were useless. So next, they tried a small, very powerful light that lasted only a few days but that could be seen as far as sixty miles. And this light proved to be valuable for the purpose. The small glow lamp, he stated, would be adapted for peacetime night lights for hallways. They can be kept on all the time at an almost negligible cost.

Continuing, Mr. Atwater said that men on life rafts had another rescue device, a small tube of phosphorescent powder, which they scattered in the water to dye it. The resulting glow could often be spotted by planes. Phosphorescent and fluorescent powder can both be employed in crime detection. There was also a phosphorescent paint that had been used, for instance, to mark all exits on ships sailing during the war.

Employed Extensively In The War

He then displayed some of the various types of lights that have been employed extensively in the war and which would be adapted for industrial or domestic purposes. Among them were the mercury vapour lamps which were invaluable in many war plants that needed strong light and which can be utilized for certain types of street lighting. Proceeding, Mr. Atwater expressed the opinion that new fluorescent lamps of various sizes and colours would be on the market by next fall. He added that most new lighting designs for industry and business involved fluorescent lighting supplemented by incandescent lights. He also showed bacteria lamps, ultra-violet sun lamps that can be used in ordinary sockets and infra-red heat lamps that are used for complaints like sinus trouble and also for quick-drying paint jobs. An army tank that formerly took twenty-four hours to dry could be driven through an oven lined with these bulbs and be dry in four minutes. He then showed a set of slides illustrating recent lighting in industrial plants, schools, offices and shops.

Street Lighting Problems

The second part of his address embraced problems of present street lighting and methods of dealing with them. He pointed out that war dimouts had given the lighting experts a specific demonstration of the relation of light to traffic accidents. He said that in the States there were as many people killed each night in traffic accidents as were killed each day of active fighting in the war areas during the war. He also enumerated the specific benefits of improved street lighting to both the community and the motorist, such as reduction of accidents, increase of property values, increase of highway capacity, reduction of insurance rates and so on. A film illustrating good and bad street lighting, and two cartoon films, produced by the Disney studios, were shown, the first on good wiring and the second on vision and its relationship to lighting.

Mr. Atwater, who has been closely identified with many pioneering movements in the lighting field since 1920, was thanked by George Cousins, supervising lighting engineer of The Hydro-Electric Power Commission of Ontario.



A BUSY day of convention sessions over, the O.M.E.A. and A.M.E.U. delegates found diversion in the enjoyable entertainment provided at the joint banquet. Among other things, the clever dance technique and costumes of the girls (top) were of arresting interest. Centre, a view of the combined lunch at the King Edward Hotel. Bottom, part of the A.M.E.U. and Electric Club lunch on Wednesday at the Royal York Hotel.

MINISTER URGES SUPPORT FOR HEALTH PROGRAMMES

**Mr. Russell T. Kelly Also Advocates Decentralization of Industry And Says Ideas of Goodwill And Co-operation Should Be Broadened
—Addresses O.M.E.A. Luncheon Gathering.**

URGING a more positive attitude of goodwill and co-operation in business and industry, and stressing the value of friendly contacts as an effective means of overcoming prejudice and misunderstanding, Mr. Russell T. Kelly, provincial minister of health, addressed a luncheon gathering of O.M.E.A. convention delegates at the King Edward hotel on March 6. He was introduced by Kenneth A. Christie, K.C., Commissioner of the Toronto Hydro-Electric System.

Stirred, perhaps, by the hearty welcome accorded him by the O.M.E.A. assembly, Mr. Kelly, who had just made a belated but successful escape from a cabinet meeting, was in rare form, and, while not departing from the theme of his discourse, somehow contrived to fit into it sparkling little human interest stories and anecdotes to the immense amusement and delight of his audience.

In new works, such as those contemplated by Hydro, Mr. Kelly said he saw better opportunities than ever of helping our fellow men. It should be remembered, however, that there were a great many people in the province who were debarred from gainful occupations because of sickness or physical disability. At the present time much money was expended by his department upon the care and treatment of people who were already sick. It was his hope that, through a general awakening of public interest and through support for health programmes, this outlay might be reduced and more money devoted to keeping people well.

Mr. Kelly gave it as his opinion that if we wanted real peace and prosperity to flourish in the land, ideas of goodwill and co-operation would have to be broadened by industrial and commercial enterprises to take in their competitors as well as themselves.

"He would be an optimist," Mr. Kelly remarked, "who would say that there was complete goodwill and accord right across Canada to-day."

The source of goodwill and co-operation was found in the individual, and it should not be regarded as a sort of delayed action business awaiting upon the other fellow to make the first move. Everyone should endeavour to encourage the friendship of his fellows by his own attitude. Real riches were counted in the friendships a man could attract to himself and not by the money he might have in the bank.

"I hope," said Mr. Kelly, "that before long we shall have a continuous highway right through from the west coast to the maritimes, so that people from all over Canada will have a better chance of visiting and meeting one another, and getting to understand each other's problems and ways of work and life. This would do much to dispel the misunderstandings that exist."

76 MUNICIPALITIES IN INSURANCE PLAN

O.M.E.A. Committee Report Shows Seven Have Joined Since 1944

Since February, 1944, seven new municipal authorities have joined in the Municipal Hydro-Electric pension and insurance plan, according to the report presented by P. B. Yates, St. Catharines, the vice-chairman of the committee, during a business session of the O.M.E.A. convention held on March 5 in the Royal York hotel, Toronto. With this addition, there were now 76 municipalities included in the scheme, and the amount of life insurance benefit in force amounted to \$7,137,915.

It was pointed out that as a result of a revision of premium rates and following consideration of actuarial reports, municipalities coming into the scheme after May 1, 1944, were required to pay their own costs each month to provide the regular benefits to their employees. It was explained that if, on a basis of 7½ per cent. payroll contributions, they were permitted to pay into the joint deposit account, in view of the fact that the majority of newly-joining commissions carried employees of advanced ages subject to higher premium rates, the account would soon show an unfavourable balance.

The war service agreement under which full benefits were maintained for employees, who were contributing prior to January 1, 1940, and who joined the armed services, was stated to be still in effect. In this connection, it was of interest to note that the majority of the returned men who, prior to the war had been engaged with the municipal Hydro commissions, were returning to take up their work. It was only in rare cases that former employees coming back from overseas had terminated their employment with the municipal authorities.

The report referred to the great loss suffered by the pensions and insurance committee in the recent death of its chairman, Joseph Gibbons of Toronto, who had been an indefatigable worker since the inception of the plan in 1929, and to whose knowledge and experience it owed so much.

STAFF BANQUET AT LINDSAY

Surprise cocktails and pink elephants were part of the programme of a board and staff banquet of the Lindsay Hydro-Electric System held at Marsh Memorial Hall in Lindsay recently.

Commissioners, employees and their wives were all invited, and the affair was voted a huge success, so much so, that the Lindsay folk think all Hydro municipalities should have similar events.

The evening's programme, under the chairmanship of J. G. Baldwin, chairman of the Lindsay Hydro-Electric System, included musical entertainment and movies shown by N. J. Lake of the H.E.P.C. promotion department.

By the way, the surprise cocktail turned out to be a fruit cup, and pink elephants was a musical number on the programme.



CONVIVIALITY WAS the keynote on Wednesday night at the combined A.M.E.U. and O.M.E.A. banquet at the Royal York Hotel. Top, a long view of the special ladies' table. Centre and bottom, two groups of diners caught by the camera.



WHITEST WASH ASSURED FOR O.M.E.A. SCRIBE

Mrs. Glyn Kestell Receives Electric Washing Machine As Wedding Gift—Presentation Made Also To W. Ross Strike, K.C., The Retiring President—His Is "In The Bag"

TWO presentations—one at least, of a rather unusual nature—featured the annual convention of the Ontario Municipal Electric Association held recently in Toronto.

Following its traditional custom—*place aux dames*—Hydro News takes pleasure in first announcing the presentation to Mrs. Glyn Kestell, nee Ciceri, since 1940, the secretary-treasurer of the association. This took place in the ball room of the Royal York hotel at the conclusion of one of the regular sessions of the convention.

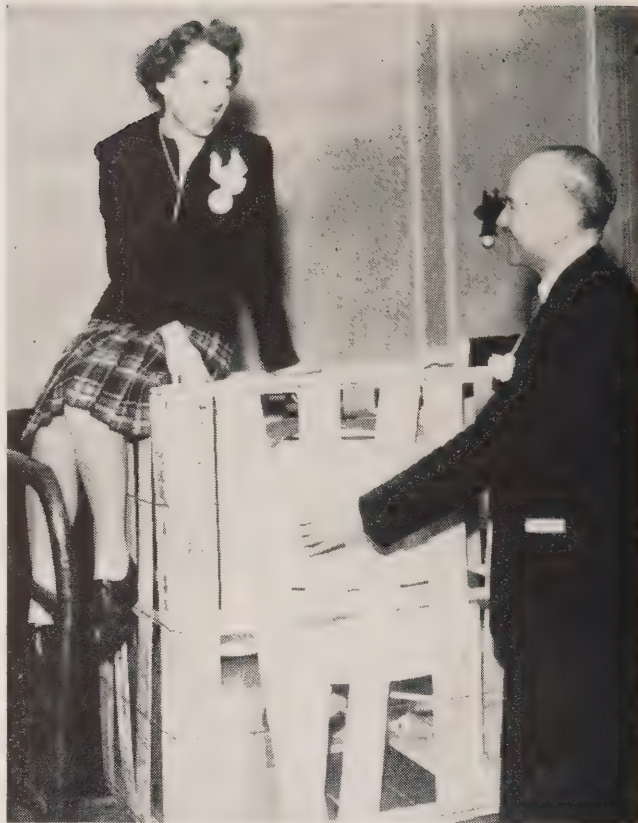
Towards the end of the meeting there had been a loud rumbling behind the screens which shut off a corner of the spacious salon. Several of the delegates tilted back their chairs and gazed up at the ceiling as if to assure themselves that the Olympian bulls depicted thereon had not got loose.

And now, at a signal from the chairman, W. Ross Strike, K.C., there was a greater rumbling than before, and two men appeared from behind screens wheeling a truck. Crated on this was a full-size, ready-to-go-to-work electric washing machine. Of course, it was a wedding present as well as a recognition of the grand job Mrs. Kestell has performed. And *figurez-vous* if the lady were pleased when she received this handsome gift which, it is believed, may perform increasingly useful service with the passing of time and assure the whitest wash.

The other presentation was announced by Kenneth A. Christie, K.C., at the luncheon meeting of the O.M.E.A. in the King Edward hotel on March 6. The recipient, by this time, will be the past president of the O.M.E.A., himself—W. Ross Strike, K.C.

"We have been watching Mr. Strike on his many pilgrimages to O.M.E.A. meetings," quoth Mr. Christie, "and it has been a matter of the deepest concern to all of us that a man of his position and reputation should travel about the country with such dilapidated and worn-out luggage. The committee engaged to look into the matter has made a thorough canvass of the markets without being able to discover any suitable equipment to replace these ancient gladstone bags and very prewar valises which have accompanied our president on his itineraries. So it has been decided to present Mr. Strike with a Victory bond—on the stipulated condition that he employ it entirely in replacing his luggage, that he persevere in his search for a new outfit, and that he make a proper accounting to us in this respect."

So if on some summer day, when other chaps are poling a long one down the fairway or casting a glittering bait into some rock-bound pool, a debonnaire gentleman, rather hot under the collar, is seen passing from store to store in the muggy, humid city, it may well be the retired president of the O.M.E.A. looking for new luggage under the relentless terms of the agreement to which he was called upon to subscribe.



SITTING ON that crate probably felt like sitting on the world so far as Mrs. Glyn Kestell, hard-working secretary-treasurer of O.M.E.A., was concerned. This photo finish to a popular wedding presentation to a charming and efficient young lady was also an occasion for some good, clean fun for the gift was an electric washing machine. W. Ross Strike, K.C., the retiring president, shown above, made the presentation.

TO ADAPT FACILITIES

(Continued from page 9)

and with the very large construction programme ahead, he did not think that a continuance in the reduction of rates nor a lessening in the growth of reserves could be reasonably expected in the near future.

Frequency Change

In concluding, Dr. Hogg referred at some length to the proposed frequency change from 25 to 60 cycles in the Niagara Division of the Southern Ontario system, and recited the arguments pro and con. Summing up, he said:

"When our report is completed, it will give you, I hope, a clearer picture of what the proposed change will mean. There is no doubt that it will involve the expenditure of a great many millions of dollars, but from a long range point of view it would certainly be desirable if we could standardize our frequency without undue financial shock to the system."

"CAMERADERIE" At The Conventions



H. L. PRINGLE, Whitby, gives his opinion while the rest of the table apparently agree. The scene is the joint A.M.E.U. and O.M.E.A. luncheon at the King Edward Hotel. The listeners are Angus Graham, Thamesville; P. G. Fraser, Thamesville; David Mowat, Whitby; F. R. Wotten, Belleville.



BETWEEN COURSES at the banquet in the Royal York Hotel, the photographer got this head table shot showing: M. P. Duff, Belleville; James Wickiam, East York; J. R. Pattison, Fort William; E. G. McCracken, Toronto; Fred Biette, Chatham; O. H. Scott, Belleville; Dr. W. J. Chapman, St. Catharines; V. A. McKillop, London and R. T. Jeffery, Toronto.

HYDRO TOPS T.V.A. ENERGY PRODUCTION

**Commission Total From All Sources For 1945—
12½ Billion Kilowatt-Hours, Challies
Tells Ontario Land Surveyors**

In the 1945 annual report of the Tennessee Valley Authority the proud statement was made that T.V.A.'s production of nearly 12 billion kilowatt-hours of electricity exceeded that of any other integrated power system in the United States. On the other hand, the 1945 summary operating report of The Hydro-Electric Power Commission of Ontario shows a total energy production from all sources of generated and purchased power of nearly 12 and one-half billion kilowatt hours.

This interesting comparison was pointed out recently in an address given at the annual dinner of the Association of the Ontario Land Surveyors in Toronto by the Hon. George H. Challies, vice-chairman of The Hydro-Electric Power Commission of Ontario.

Mr. Challies stated that the people of Ontario took a special interest in the progress and achievements of the T.V.A. because its early days coincided with a time when the Hydro undertaking of Ontario had already received world-wide recognition as an innovation in statecraft—a successful co-operative enterprise operated by an independent commission and suppling an essential public service.

Modelled After Hydro

The T.V.A., he continued was an integrated utility with a wide range of interests covering the rehabilitation of a great river valley which had fallen upon evil days. Those responsible for its great programme recognized from the start that the superstructure of its ultimate success must rest upon the firm foundation of river control and ample low-cost electric power supplies. So they turned for inspiration and guidance to Ontario, and in its broad power aspects, the T.V.A. was modelled after Hydro, taking into account, of course, different conditions and circumstances.

Average Consumption Per Year

The speaker pointed out that in 1945, 520,000 residential consumers were served by T.V.A. power, and that the average consumer used 1,754 kilowatt-hours per year, for which he paid an average cost of 1.85 cents per kilowatt-hour, as compared with the United States' average consumption of 1,186 kilowatt-hours and an average cost of 3.47 cents. It was interesting to note, continued Mr. Challies, that in 1944, in Ontario, 723,000 urban and rural domestic and farm consumers paid an average cost per kilowatt-hour of 1.31 cents. The average cost per kilowatt-hour to the 580,000 urban domestic consumers was 1.15 cents. The average yearly consumption of the urban domestic consumers was 2,328 kilowatt-hours, and of the farm consumers, 1,920 kilowatt-hours.

Mr. Challies, as one long interested in municipal affairs, spoke briefly on city planning.

"Much of the form and character of the city," he said,

GOODWILL AND UNDERSTANDING

(Continued from page 12)

ahead of the municipalities during the next few years. Important decisions, he said, would have to be made which would directly affect generations to come. He had, however, complete confidence that the association would not falter when the pressure was on, and that it would help to take Hydro to new heights of achievements.

Officers of the O.M.E.A. for 1946 were elected as follows:

Honourary president: Dr. Thomas H. Hogg, chairman, H.E.P.C.; honorary vice-presidents: F. Biette, Chatham; G. S. Matthews, Peterborough; C. J. Halliday, Chesley; Dr. W. J. Chapman, St. Catharines; H. O. Hawke, Galt; K. A. Christie, K.C., Toronto.

President: R. M. Durnford, Sarnia; past president: W. Ross Strike, Bowmanville.

District vice-presidents: District 1—G. E. Findlay, Carleton Place; 2—J. R. Beaulieu, Penetanguishene; 3—Col. H. Cook, Port Arthur; 4—J. Irwin, Brampton; 5—Richard Thomson, Paris; 6—G. W. Gordon, Kitchener; 7—H. R. Henderson, Woodstock; 8—unfilled through election of R. M. Durnford as president.

District directors: 1—M. P. Duff, Belleville, and James Halliday, Kingston; 2—G. F. Hutcheson, Huntsville, and W. Dixon, Arthur; 3—J. R. Pattison, Fort William, and C. H. Moors, Fort William; 4—K. A. Christie, K.C., Toronto, and A. G. Jennings, East York; 5—George Austin, Dundas, and K. C. MacLeod, Stamford Township; 6—H. O. Hawke, Galt, and W. P. Kress, Waterloo; 7—J. B. Hay, London, and P. R. Locke, St. Thomas; 8—Charles Austin, Chatham, and A. P. St. Louis, Riverside.

"was determined by the quality of its subdivisions and the standards which were built into them. Once land had been cut up into streets, blocks and lots, and publicly recorded, the die was cast and the pattern was immensely difficult to change. A high price had to be paid for neglect of subdivision control. Traffic congestion, blighted areas, slums, increased cost of public improvements and other difficulties were attributable in large measure to imperfect land subdivision."

Grew Like Topsy

In Canada, he continued, they had followed the practice of the United States during the latter period of its rapid growth but, almost invariably, without the sound basic plan which characterized the early design of many American cities. All too frequently, he said, Canadian cities grew like Topsy, without guidance or control.

The Hydro vice-chairman pointed out, however, that it would be unfair to place the responsibility for this state of affairs solely, or even largely, upon the shoulders of those who, in the past, had done the actual survey work of land subdivision.

If they thought, Mr. Challies reiterated, of the work of subdivision, not as cutting up lands into lots and roads, but, as part of the design of a great city, it was possible that in future they might have space and beauty, orderliness and economy, traffic freedom, adequate parks, and homes surrounded by beautiful gardens, in communities where the inhabitants might proudly boast that they belonged "to no mean city."

120-VOLT STANDARD URGED BY SCHWENGER

Addresses A.M.E.U. Gathering On "Planning Ahead For Better Economy In Urban Distribution Systems"

Adoption of 120 volts as a standard would make the need for lamps and apparatus designed for other voltages unnecessary was a point brought out in a paper given by C. E. Schwenger, chief engineer, distribution department of the Toronto Hydro-Electric System at the Wednesday afternoon session of the A.M.E.U. convention.

His talk entitled, "Planning Ahead For Better Economy In Urban Distribution Systems," involved a discussion of the various factors that must be considered in arriving at a design of a distribution system which would give a minimum annual carrying charge over an extended period.

Mr. Schwenger spoke of the 120/240 volt secondary distribution systems in common use in most communities, and also the primary systems applying transformers and conductors.

He pointed out that in connection with the supply of service to householders and commercial consumers, something could be gained by having distribution systems operate uniformly throughout the province at a standard voltage. He went on to say that he himself would recommend that 120 volts be the standard supply voltage to consumers for lighting, rather than the 110 and 115 which are used in some communities. "The adoption of 120 volts as a standard," he said "would make the need for lamps and apparatus designed for other voltages unnecessary and would probably be reflected in lower costs of these devices."

Later, Mr. Schwenger answered questions that had been handed in to him. Among those who took part in the discussion that followed were: P. B. Yates, St. Catharines; J. E. Teckoe, Jr. Galt; E. R. Lawler, Toronto; R. S. Reynolds, Chatham; J. F. McDermid, Hamilton; T. R. C. Flint, Toronto; R. H. Martindale, Sudbury, and V. A. McKillop, London.

MANY REPORTS PRESENTED

(Continued from page 14)

out Ontario in conjunction with the Electric Service League.

Problems arising from the operation of Hydro shops in different municipalities were also discussed, and the matter of dealer co-operation was emphasized as being very important and a subject which, it was suggested, should receive careful consideration.

J. W. Peart, chairman of the Employees' Relations Committee, reported that this committee had been asked to investigate and study the working conditions of employees in the Hydro municipalities. As a result of replies received from a questionnaire sent to twenty-five municipal systems, the committee was able to compile an informative summary. Copies of the initial report were forwarded to the municipalities and contained recommendations relative to working hours, sickness and vacation allowances. After further study a model working agreement as between the Public Utility Commission and the Employees' Organization was drawn up. Since there are widely different conditions existing in the various municipalities, it was felt that the form must be a guide rather than a definite sample. It was recommended that copies of this form of agreement be prepared and made available to members upon application.

PATIENCE, WISDOM REQUIRED

(Continued from page 26)

engineer, H.E.P.C.; Kenneth A. Christie, K.C., Toronto; C. E. Pickering, Ottawa; C. J. Halliday, Chesley; F. A. Archer, Toronto; H. R. Henderson, Woodstock; V. A. McKillop, London; M. P. Duff, Belleville; J. Wickiam, East York; J. R. Pattison, Fort William; E. D. McCracken, Sangamo; G. S. Matthews, Peterborough; G. W. Gordon, Kitchener; Roy Pierson, Brantford Township; R. J. Beaulieu, Penetanguishene.

The proceedings closed with an enjoyable programme of entertainment arranged under the direction of the Commercial Section of the A.M.E.U.



MEET THE new A.M.E.U. executive. Back row: J. E. Teckoe, Jr., Galt; M. W. Rogers, Carleton Place; A. W. H. Taber, Fort William; R. S. Reynolds, Chatham; R. P. Darrell, Toronto. Front row: A. E. Ditchburn, Strathroy; W. R. Harmer, Toronto; J. R. Sullivan, Woodstock; R. J. Smith, Perth; S. W. Canniff, Ottawa and R. S. King, Midland. Absent are G. F. Shreve, Oshawa and V. A. McKillop, London.



THESE FISH are not being fried for supper. On the contrary they are cleverly being put to use as artificial illumination for this solemn conclave of west coast Indians. Stuck securely on poles, their natural oil makes them inflammable and shreds of bark which run through the body, serve as wicks.

WHEN DAY IS DONE

(Continued from page 6)

is said that it was usually the job of one of the children to watch the light while the grown-ups worked. Gradually the holders were made of iron, sometimes of very fancy designs. These have been used quite recently in farm houses in out-of-the-way corners of Norway and Sweden.

Soaked In Hot Grease

In England where there was not so much resinous wood, the rushlight was developed. This consisted of a long freshly-cut rush soaked in water, peeled, and then dried and soaked in hot grease. It was usually two or three feet long and, when held in a holder of the same general design as the pine splint holder, would burn for about an hour. The rush was held at an angle like the splint but was lit at the upper end. This form of light was known at least as far back as Pliny and has been in use up to recent times in, for example, obscure parts of Ireland.

Imprisoned Fire-Flies

Although burning wood or rushes were two of the most common primitive methods of getting light, in other parts of the world where they were not so available other ingenious methods were found. For instance, certain natives of the West Indies imprisoned fire-flies in baskets to light their houses. The efficiency of these small "living lights" is not recorded.

In some of the East India islands they burned a berry whose seeds had enough oil to make a flame. In the Malay states a kind of resinous gum was wrapped in palm leaves to make a sort of torch. In certain parts of South America charcoal and beeswax were wrapped in



A HERITAGE of hard work—the secret of its success—is bequeathed by S. W. Canniff (top, left) past-president of the A.M.E.U., to the association's new president, R. J. Smith; while (bottom) W. Ross Strike, K.C., retiring president of the O.M.E.A., comes to friendly grips with his successor, R. M. Durnford of Sarnia.

leaves and used in the same way. Other torches have been whole animals. In the Shetland islands the fat bodies of stormy petrels have been used for light, with wicks thrust down their throats. And among the Esquimaux and certain Red Indian tribes an oily fish served as a torch. It was stuck on a pole with strips of twisted bark for wicks.

Highly Odoriferous

These rude torches must have produced a light which would be, from our point of view, a very poor thing. They would be smoky (in the case of the fish torches highly odoriferous) and in need of almost constant attention to keep them going. However, they were undoubtedly looked upon with pride by their inventors and take their place rightfully in the long story of human progress.



Hydro

HOME FORUM

by Edithemmu Muir

HOME ECONOMIST

THE magic you can work with a yeast cake or two in turning out fancy breads and fluffy rolls will come in handy for the Easter weekend. For who will not relish some hot cross buns on Good Friday, or beam on the one who is responsible for the coffee cake served at Easter breakfast?

Come to think of it, the one who produces yeast breads in her own kitchen beams, too. Because she has every right to be proud of such a culinary accomplishment. If you have made rolls or hot cross buns you will know what a satisfaction it is to see them fresh from the oven. If you have yet to delve into this branch of cookery, you have a pleasant surprise ahead of you—provided you start with a good recipe and see to it that the yeast dough is kept at the right temperature while it is rising.

If you are adhering to the best rules of nutrition you will want to use whole wheat flour in the dough. Use fine, whole wheat flour or graham flour and substitute it for about one-third of the white flour. Too, always use bread flour or all-purpose flour for yeast products. They contain more gluten to make a lighter food.

And, by the way, a copy of a tested Hot Cross Bun recipe will be supplied on request. Just reach for the telephone.

TIMELY TIPS

1. To protect miniature glass figures from possible damage, anchor them to small purse mirrors with household cement.

2. Two paper plates kept in the flour bin are handy when you are sifting flour before and after measuring. They bend for easy transference of dry in-

gredients and they last a long time.

3. An unsharpened pencil in the sewing equipment for turning belts and other tubular things right-side out. An eraser on the end has enough traction to make the turning easy.

4. Hold chops, strips of bacon, etc., on the fork till the fat drips off. Save fat for butter substitute.

5. Keep dried apples, raisins, figs and prunes fresh by storing in dry glass jars with lids that screw on tightly.

6. Allow egg stains to dry before soaking in cold water . . . never hot water.

7. Fold ironed pillow cases and sheets instead of pressing in creases to avoid wear along these places.

8. If a bleach is used in laundering it should be thoroughly mixed with the rinse water and two rinses are advised so that none of it will remain in fabric when clothes are not hung outside.

CARE OF MEN'S SUITS

Six to eight weeks before hubby's new suit is delivered! Meanwhile, he fears the worst—life in a barrel! His anxiety, however, can be eased if you help him care for his old clothes.

Before you hang up his suit, oust the day's accumulation of grit which grinds in and weakens woollens. To hang trousers, fold by straightening along the creases, and hang by their cuffs on a pants hanger. Button up the jacket on a padded coat hanger, man-sized enough to square off shoulders.

Lengthen the life-expectancy of any woollen suit by giving it a periodic turkish bath: Hang the suit in the bathroom and close the door while you run the hot water tap for a few

minutes. Let the garments steam for an hour, then stretch out seams and hang in a breeze or in front of electric fan to dry quickly. Pull into place frequently.

You are urged by the experts not to press a suit more often than is necessary. Before you press, inspect for tea or other beverage stains and sponge off with several applications of spot remover. You can tackle grease stains with a spot cleaner if you work with extreme caution. The "ring-hazard" is reduced by cushioning the place underneath with a soft towel and wiping the grease off—not in. Take a lint-proof piece of fabric and widen the area around the stain and feather out the edges.

How to press? Before you start, turn out pockets and cuffs. A chemically treated press cloth which, when generously dampened, releases live steam, makes it easy to smooth out wrinkles and eradicates a pair of knee bags. If you haven't such a cloth, use a cloth wrung out of hot water for dampening the garment, and a big piece of wrapping paper for shielding a hot iron.

The technique of taking out bagginess at the knees is to use one hand and pull that section in diagonal directions as you iron.

To restore original creases, place the seams together and press, (do not iron) until steamy fabric is dry. A professional trick is padding between the pockets and other reinforced areas while pressing over the paper to prevent shine. If the man likes his sleeves uncreased—as some men do—use a sleeve board for easy turning and ironing out of wrinkles.

After pressing, brush the suit to restore the nap, and hang it where it will dry thoroughly.

#his and #hat

BY THE EDITOR

THERE'S a little villa—or there was—at Pourville near Dieppe in France, and in front of that villa there was a garden wall.

This true story concerns that wall. It was told by Percy Philip, Ottawa correspondent of New York Times and one of the pre-eminent newspapermen of modern days, when addressing the recent O.M.E.A.-A.M.E.U. Convention.

It appears that Philip built this wall some years ago with his own hands—and he was very proud of his achievement—to shelter his garden from the sea winds. Eventually, however, he discovered that he had provided a ready-made fortification for the Germans who used it when the Canadians stormed ashore at Pourville during the Dieppe raid on the morning of August 17, 1942. "The Nazis," said Mr. Philip, "began pumping lead at them from behind my garden wall. It was the last thing in the world I had ever intended or expected to happen. I certainly never invited these Germans to occupy my villa. Naturally, the Canadians thought the right thing to do was to throw them out and capture my villa for me."

Mr. Philip then related how a couple of the Canadians had climbed up the steep bank on the right and had begun throwing hand grenades into the garden, "playing havoc with my rose bushes and pear trees." In the end they turned the mortars on the place and completely destroyed it "with a lot of Germans, I hope."

And now that the war is over, Mr. Philip is confronted with an interesting problem—one which, he believes, will be of interest to the legal fraternity. He keeps wondering who is going to pay him any compensation. It's an interesting case—a villa in France

owned by a Scotsman, occupied by the Nazis and destroyed by the Canadians. "All I have got out of it until now," he says, "is the most beautiful exhibition of international buck passing that I have ever seen!"

* * *

FROM THE garden wall we now "lunge" into a fishing expedition below the waters of Ontario's lakes, rivers and streams where, for the past few weeks, the inhabitants are reported to have been "floundering" around in a state of fear. It appears that after casting about for information, all the little fishes and all the big fishes, including the "lost legion" of those that "got away" and the three that went over the dam, confirmed an alarming rumour which had been current in these waters and which had been causing "deep" concern. Goldie the Glint, it seems, operating unobtrusively in an aquarium in a Commission employee's home, learned some important facts and, using short wave—a mere ripple in fact—got through the long waves of Lake Nipigon with a special "cod" message. Basil the Bass, was waiting with baited breath and quickly caught on to the message which he conveyed to the highest level, to His Excellency the Sturgeon of Albany who was having a mickey fin with Her Grace the Caviar d'Hors-d'Oeuvres. The news became more current than ever, especially when the names of John Stark, Art Sharpe and other Commission employees were mentioned.

Huddling in a secret, water-proof hideout equipped with radar, two sandwiches and a bottle of ginger ale, Hydro News was in on the ground floor when the message was delivered.

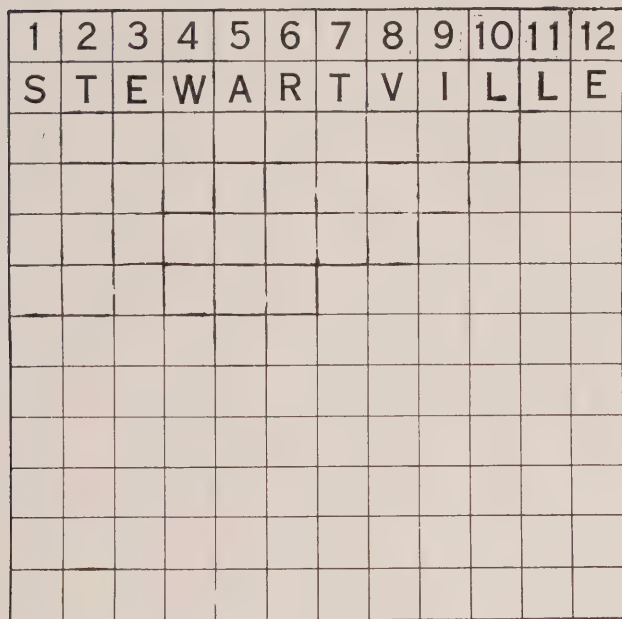
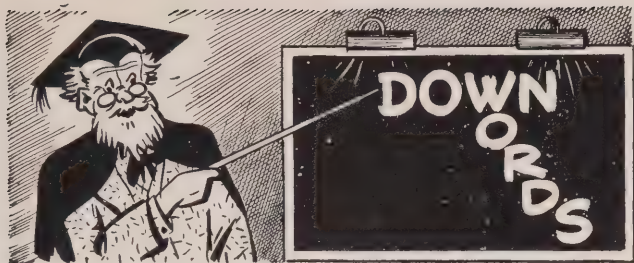
"M-m-m-m," gulped His Excellency

as he adjusted his pince-nez and scanned the report. "Unless I'm all wet this constitutes a definite threat to our safety. Order an immediate evacuation from these piscine precincts to points north of the fiftieth parallel and waste no time. These Hydro lads are planning a power play. If we don't get out of here they'll give us the air and land us on the rocks."

The foregoing may be attributed to the influence and still close proximity of April 1 and the association of that date with fish as expressed in the French phrase "poisson d'avril!" On the other hand, it might be the Spring-time which prompts people to say and do strange things in giving expression to their "soleful" exuberance.

There is no fooling about this however: the Ontario Hydro-Electric Anglers' Club has been organized and ninety-seven-er-members have been signed up to date. The Kingfish or president is A. H. Sharpe, while the others elected are: vice-president, A. Wytenback; secretary, J. B. Horrell; treasurer, J. H. McTavish; immediate past president, John Stark; executive: R. E. Taylor, H. J. Edwards, W. A. Ollen-Bittle; field committee, J. R. Smith, N. E. McPherson, L. A. Teal, C. J. Drew; Auditors, W. H. Fawcett and J. C. Merton.

Plans are being made for a programme of educational meetings and instruction in the art of fishing, while organized trips are being arranged. The club is also cataloguing all the fishing waters in the province so that members may have the latest information on where to go for what they want to get. The bait is very tempting and, no doubt, many Hydro employees will be willing to come across with a dollar to enjoy the many opportunities and privileges extended by the new club.



A H, here we have it," decided Professor Peter Perplexus, who had been thumbing over a Hydro progress report. "We've started in at Stewartville on the Madawaska river. A fair-sized development, too . . . 54,000 horsepower. I'll work it into a nice little Downwords puzzle."

He got busy immediately with pencil and paper, and after a few moments of frowning application, looked up and around with his customary ingenuous smile.

"It's all very easy—but—just in case—you'd better bring your thinking caps along."

DEFINITIONS

1. What an over-all change to 60-cycle would do to frequencies.
2. What would you call a person living in a city whose meteorological bureau is located at 43 degrees, 39 minutes, 36 seconds north latitude, and 79 degrees, 23 minutes, 40 seconds west longitude?
3. On the Stewartville development this is expected to run to \$9,000,000.
4. Precursor of the Hydro truck on power site excavation jobs.
5. Caught off guard after midnight of the last day of the third month of the year and before noon of the first day
6. A characteristic of Hydro.
7. Hydro surveyors often have to do this to lakes.
8. If you say "hail" to 60-cycle frequency, your greeting to 25-cycle frequency will be this.
9. Roll, you bones! Roll, you bones! Come on, you lucky seven!"
10. Hydro street lighting has replaced this old-fashioned fellow, who, himself, had supplanted . . .
11. . . . these even more antiquated boys.
12. Type of gales experienced around the twenty-first of March and the twenty-first of September.

SOUTHERN ONTARIO SYSTEM EMBRACING NIAGARA, GEORGIAN BAY AND EASTERN ONTARIO DIVISIONS

PRIMARY LOAD

HORSEPOWER



2,500,000

2,000,000

1,500,000

1,000,000

500,000

JAN. FEB. MAR. APR. MAY JUNE JULY AUG. SEPT. OCT. NOV. DEC.

PRIMARY LOADS

AREA SERVED BY	MAXIMUM 20-MINUTE PEAK H.P.		PER CENT INCREASE
	FEBRUARY, 1946	FEBRUARY, 1945	
SOUTHERN ONTARIO SYSTEM . . .	2,069,542	2,061,399	+ 0.4
THUNDER BAY SYSTEM . . .	132,172	120,107	+ 10.0
NORTHERN ONTARIO PROPERTIES . . .	198,541	195,464	+ 1.6
TOTAL . . .	2,400,255	2,376,970	+ 1.0

PRIMARY AND SECONDARY LOADS

SOUTHERN ONTARIO SYSTEM	2,142,899	2,092,284	+ 2.4
THUNDER BAY SYSTEM	141,153	133,378	+ 5.8
NORTHERN ONTARIO PROPERTIES	286,496	225,297	+ 27.2
TOTAL . . .	2,570,548	2,450,959	+ 4.9

MUNICIPAL LOADS, JANUARY, 1946

SOUTHERN ONTARIO SYSTEM

NIAGARA DIVISION (25-Cycle)

	H.P.	Domes- tic Con- sumers		H.P.	Domes- tic Con- sumers		H.P.	Domes- tic Con- sumers
Acton	1,894	544	Erie Beach	11	79	Palmerston	694	400
Agincourt	328	168	Essex	724	528	Paris	2,481	1,215
Ailsa Craig	168	147	Etobicoke	12,165	6,157	Parkhill	330	315
Alvinston	170	205	Exeter	934	544	Petrolia	1,236	825
Amherstburg	1,165	734	Fergus	1,418	770	Plattsville	176	118
Ancaster Twp.	579	394	Fonthill	273	300	Point Edward	1,847	349
Arkona	85	117	Forest	683	510	Port Colborne	2,593	1,655
Aurora	1,673	793	Forest Hill	10,025	3,537	Port Credit	1,334	649
Aylmer	1,182	758	Galt	12,982	4,296	Port Dalhousie	1,035	691
Ayr	282	227	Georgetown	2,338	833	Port Dover	541	750
Baden	659	168	Glencoe	246	230	Port Rowan	152	171
Beachville	725	167	Goderich	1,821	1,361	Port Stanley	466	825
Beamsville	688	399	Granton	68	85	Preston	4,628	1,689
Belle River	264	314	Grimsby	1,201	655	Princeton	157	98
Blenheim	848	560	Guelph	13,610	5,703	Queenston	144	81
Blyth	163	184	Hagersville	660	406	Richmond Hill	725	414
Bolton	287	172	Hamilton	168,062	43,700	Ridgetown	800	599
Bothwell	204	185	Harriston	525	378	Riverside	1,818	1,559
Brampton	3,452	1,627	Harrow	623	350	Rockwood	193	174
Brantford	24,271	8,337	Hensall	314	210	Rodney	196	239
Brantford Twp.	1,991	1,476	Hespeler	3,252	825	St. Catharines	27,205	8,742
Bridgeport	270	178	Highgate	125	107	St. Clair Beach	142	102
Brigden	144	125	Humberstone	724	738	St. George	233	154
Brussels	230	256	Ingersoll	3,624	1,568	St. Jacobs	323	141
Burford	295	235	Jarvis	207	163	St. Marys	1,968	1,076
Burgessville	98	64	Kingsville	836	641	St. Thomas	9,524	4,718
Burlington	2,231	1,234	Kitchener	31,985	8,718	Sarnia	8,540	5,403
Burlington Beach	599	732	Lambeth	198	140	Scarborough Twp.	7,155	5,950
Caledonia	513	452	LaSalle	373	259	Seaforth	1,098	524
Campbellville	62	50	Leamington	2,320	1,688	Smithville	192	185
Cayuga	193	186	Listowel	1,648	801	Simcoe	3,139	1,678
Chatham	8,733	4,575	London	48,626	19,859	Springfield	107	133
Chippawa	472	364	London Twp.	748	494	Stamford Twp.	4,056	2,497
Clifford	128	130	Long Branch	1,925	1,564	Stoney Creek	384	289
Clinton	809	593	Lucan	271	186	Stouffville	426	408
Comber	169	120	Lynden	129	105	Stratford	8,283	4,561
Cottam	113	131	Markham	471	350	Strathroy	1,739	876
Courtright	65	91	Merlin	159	124	Streetsville	281	208
Dashwood	149	102	Merritton	10,400	962	Sutton	311	468
Delaware	101	71	Milton	1,663	555	Swansea	4,076	2,096
Delhi	948	609	Milverton	484	263	Tavistock	687	300
Dorchester	149	157	Mimico	3,947	2,305	Tecumseh	463	711
Drayton	176	167	Mitchell	910	521	Thamesford	317	147
Dresden	613	466	Moorefield	128	56	Thamesville	308	243
Drumbo	127	90	Mount Brydges	141	166	Theford	125	166
Dublin	51	61	Newbury	46	70	Thorndale	86	83
Dundas	3,481	1,458	New Hamburg	691	384	Thorold	3,774	1,274
Dunnville	1,742	1,063	Newmarket	2,351	1,022	Tilbury	1,158	502
Dutton	311	234	New Toronto	11,997	2,029	Tillsonburg	1,961	1,243
East York Twp.	13,004	11,918	Niagara Falls	12,947	4,984	Toronto	433,746	154,302
Elmira	1,524	554	Niagara-on-the-Lake	993	623	Toronto Twp.	4,871	3,065
Elora	520	355	North York Twp.	13,680	7,019	Wallaceburg	5,510	1,387
Embro	184	125	Norwich	570	391	Wardsville	63	65
Erieau	146	197	Oil Springs	209	104	Waterdown	385	280
			Otterville	144	143	Waterford	634	397
						Waterloo	7,084	2,306
						Watford	419	312

MUNICIPAL LOADS, JANUARY, 1946

	H.P.	Domes- tic Con- sumers		H.P.	Domes- tic Con- sumers		H.P.	Domes- tic Con- sumers
Welland	12,203	3,264	Neustadt	47	110	Kemptville	470	393
Wellesley	147	137	Orangeville	1,044	746	Kingston	18,758	7,867
West Lorne	296	227	Owen Sound	7,743	3,663	Lakefield	559	360
Weston	6,136	1,700	Paisley	185	202	Lanark	130	173
Wheatley	263	237	Penetanguishene	1,298	773	Lancaster	75	116
Windsor	54,487	26,909	Port Carling	136	211	Lindsay	3,712	2,289
Woodbridge	875	314	Port Elgin	570	509	Madoc	264	318
Woodstock	9,562	3,448	Port McNicoll	132	241	Marmora	183	249
Wyoming	142	166	Port Perry	390	381	Martintown	60	56
York Twp.	27,741	21,946	Priceville	10	38	Maxville	147	176
Zurich	156	149	Ripley	186	129	Millbrook	136	182
	(66⅔-Cycle)		Rosseau	32	58	Morrisburg	421	444
Bronte	229	244	Shelburne	314	314	Napanee	1,710	897
Oakville	2,150	1,285	Southampton	634	567	Newcastle	296	230
Trafalgar Twp.	862	573	Stayner	314	341	Norwood	195	242
	GEORGIAN BAY DIVISION		Sunderland	113	140	Omeme	250	173
	(60-Cycle)		Tara	166	164	Orono	136	183
Alliston	561	447	Teeswater	225	233	Oshawa	18,686	6,765
Arthur	232	199	Thornton	48	67	Ottawa	43,817	15,658
Bala	127	336	Tottenham	157	161	Perth	1,998	1,110
Barrie	5,257	2,471	Uxbridge	493	423	Peterborough	19,345	6,702
Beaverton	319	331	Victoria Harbour	88	271	Pictou	1,694	1,336
Beeton	134	148	Walkerton	1,296	687	Port Hope	3,178	1,455
Bradford	395	291	Waubushene	113	235	Prescott	1,478	815
Brechin	63	53	Warton	491	437	Richmond	85	85
Cannington	259	262	Windermere	28	64	Russell	120	119
Chatsworth	134	108	Wingham	1,028	560	Smiths Falls	3,444	2,012
Chesley	637	456	Woodville	115	116	Stirling	445	293
Coldwater	196	159				Trenton	6,332	1,833
Collingwood	2,633	1,650				Tweed	418	321
Cookstown	114	119				Warkworth	104	135
Creemore	184	176				Wellington	279	343
Dundalk	302	210				Westport	141	149
Durham	458	464				Whitby	1,945	1,054
Elmvale	203	191				Williamsburg	129	86
Elmwood	96	72				Winchester	425	309
Flesherton	92	126						
Grand Valley	199	184						
Gravenhurst	1,665	593						
Hanover	1,607	850						
Holstein	25	63						
Huntsville	1,433	744						
Kincardine	852	741						
Kirkfield	26	37						
Lucknow	435	287						
MacTier	140	128						
Markdale	230	231						
Meaford	912	757						
Midland	4,404	1,625						
Mildmay	207	184						
Mount Forest	723	502						

	H.P.	Domes- tic Con- sumers		H.P.	Domes- tic Con- sumers
Alexandria	485	415	Neustadt	47	110
Apple Hill	53	66	Orangeville	1,044	746
Arnprior	1,575	891	Owen Sound	7,743	3,663
Athens	144	183	Paisley	185	202
Bath	56	64	Penetanguishene	1,298	773
Belleville	9,214	3,939	Port Carling	136	211
Bloomfield	136	181	Port Elgin	570	509
Bowmanville	3,644	1,234	Port McNicoll	132	241
Brighton	621	563	Port Perry	390	381
Brockville	5,237	3,101	Priceville	10	38
Cardinal	402	394	Ripley	186	129
Carleton Place	2,061	1,076	Rosseau	32	58
Chesterville	396	248	Shelburne	314	314
Cobden	184	160	Southampton	634	567
Cobourg	2,607	1,443	Stayner	314	341
Colborne	323	285	Sunderland	113	140
Deseronto	288	395	Tara	166	164
Finch	147	107	Teeswater	225	233
Frankford	206	262	Thornton	48	67
Hastings	162	238	Tottenham	157	161
Havelock	242	295	Uxbridge	493	423
Iroquois	372	279	Victoria Harbour	88	271

	H.P.	Domes- tic Con- sumers
Fort William	18,595	73,332
Nipigon Twp.	336	243
Port Arthur	22,876	6,099

	H.P.	Domes- tic Con- sumers
North Bay	6,156	3,379

	H.P.	Domes- tic Con- sumers
Sioux Lookout	426	512

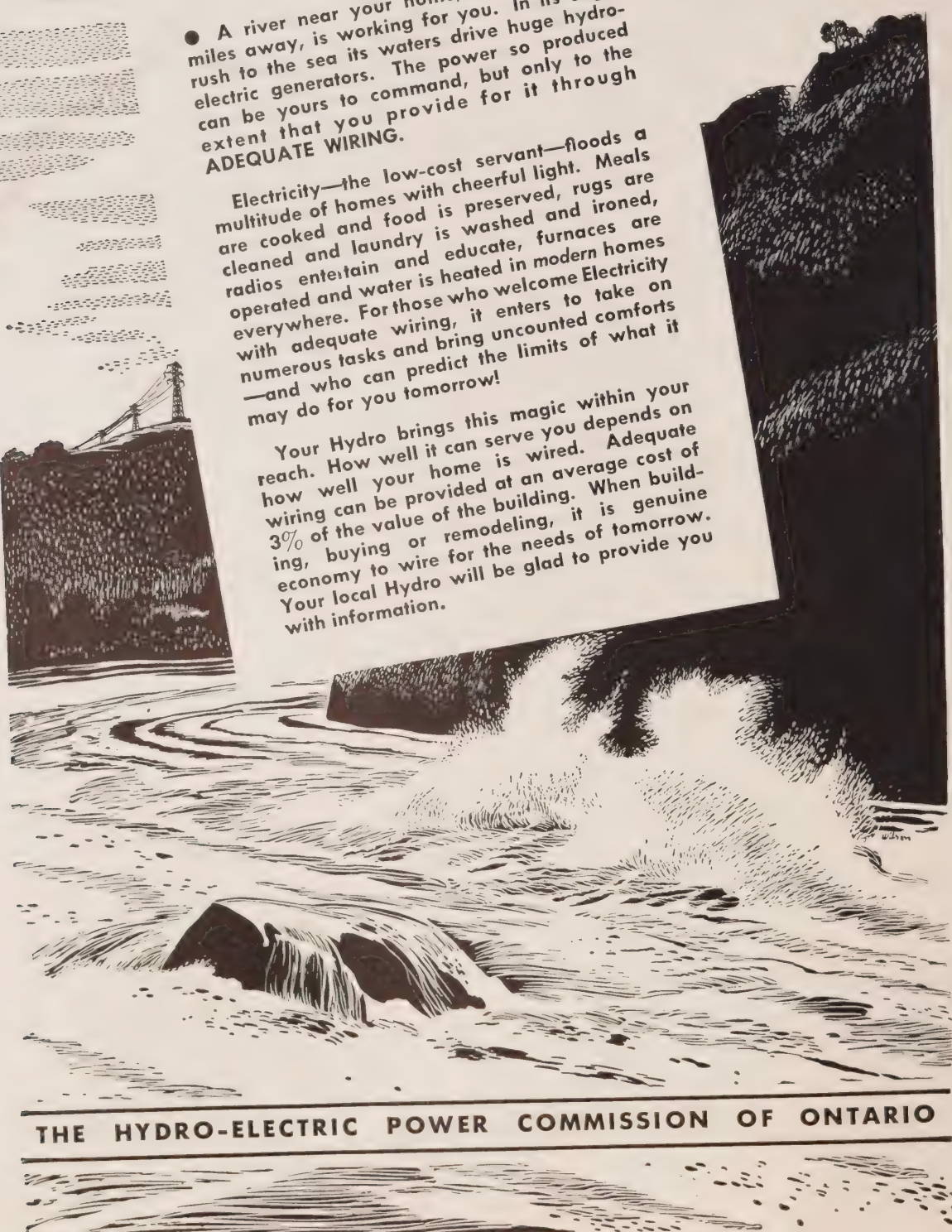
	H.P.	Domes- tic Con- sumers
Capreol	363	344
Sudbury	12,650	8,734

MAKING THE RIVERS *work for you!*

- A river near your home, or hundreds of miles away, is working for you. In its eager rush to the sea its waters drive huge hydro-electric generators. The power so produced can be yours to command, but only to the extent that you provide for it through **ADEQUATE WIRING.**

Electricity—the low-cost servant—floods a multitude of homes with cheerful light. Meals are cooked and food is preserved, rugs are cleaned and laundry is washed and ironed, radios entertain and educate, furnaces are operated and water is heated in modern homes everywhere. For those who welcome Electricity with adequate wiring, it enters to take on numerous tasks and bring uncounted comforts—and who can predict the limits of what it may do for you tomorrow!

Your Hydro brings this magic within your reach. How well it can serve you depends on how well your home is wired. Adequate wiring can be provided at an average cost of 3% of the value of the building. When building, buying or remodeling, it is genuine economy to wire for the needs of tomorrow. Your local Hydro will be glad to provide you with information.



THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO

HYDRO! News

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BLOSSOM "LINE"



SERVANTS GALORE . . . BY WIRE

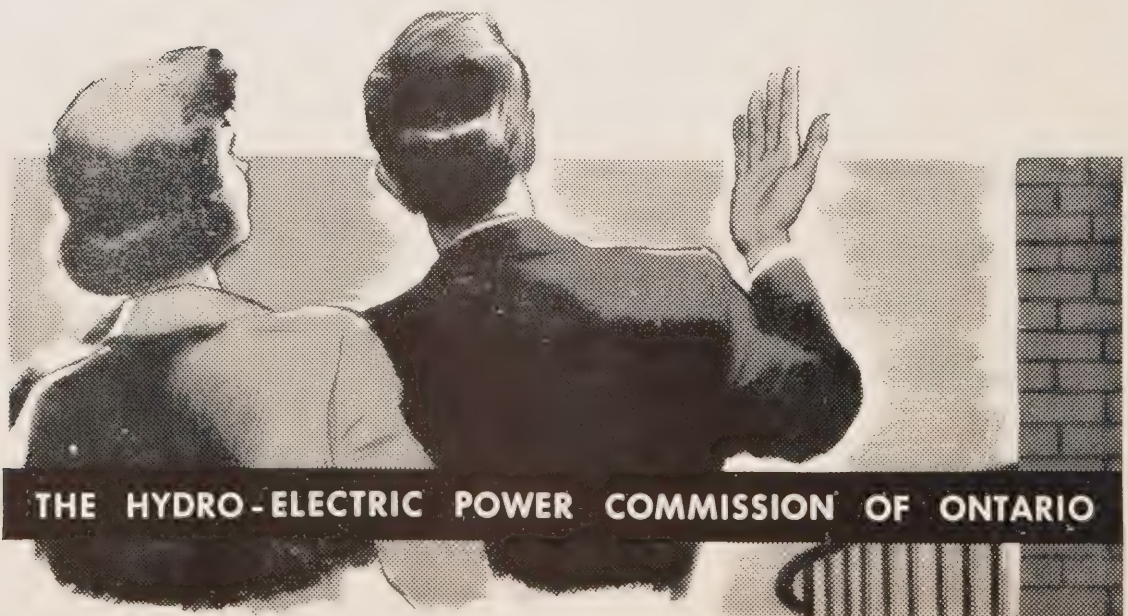
● The time to solve the servant problem once and for all is when you are building or "modernizing" your home. The greatest modern domestic servant is electricity. How well and to what extent electricity can serve you, now and in the future, depends on how well your "servant's entrance" is designed . . . how wisely your home is wired.

Inadequate wiring limits the use of electricity. It leads only to inefficient operation of lights and appliances. But adequate wiring . . . three wire service to the house, with proper size circuits in the home and plenty of outlets in every room . . . overcomes these difficulties, and gives you full use of these modern servants.

Electrical home appliances increased rapidly in number and variety before the war. They are now reappearing and will continue to multiply. Homes that were wired only for the needs of 20 years ago should now be rewired to suit the wonderful new "electrical servants" to come.

Hydro's low-cost dependable service enables you to use these modern servants to the full if you have provided for them. In planning your new home, put adequate wiring at the top of your list.

If you are improving or building a home, ask your Hydro for the booklet "Adequate Wiring for the Postwar Electric Homes of Canada."



THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO



THE HYDRO - ELECTRIC POWER COMMISSION OF ONTARIO

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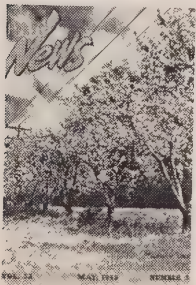
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THE FRONT COVER



TO the music lover
"Blossom Time" im-
mediately suggests Schu-
bert's "Song Of Love," "Un-
finished Symphony" and
other immortal numbers as-
sociated with that operetta.
To Ontario folks it sug-
gests a scene such as that
portrayed on this month's
front cover by J. H. Mac-
kay and bearing the title
"Blossom Line."

Volume 33

May, 1946

Number 5

CONTENTS

	Page
Little Lambs - - - - -	2
Page Three - - - - -	3
Hydro's Front Line - - - - -	4
Hydro Men Honoured - - - - -	8
Royal City - - - - -	9
Springtime Is "Splicing" Time - - - - -	14
When Day Is Done - - - - -	15
Dr. Thomas H. Hogg Addresses C.M.A. - - - - -	19
A. S. L. Barnes Passes - - - - -	20
Down Through The Years - - - - -	21
Around The Hydro Circuit - - - - -	24
Notes From The Dance - - - - -	25
Hydro Home Forum - - - - -	26
"Syd" And "Sam" Depart - - - - -	27
J. R. McLinden Retires - - - - -	28
This And That - - - - -	29
Down Their Alley - - - - -	31
Presentations To Quarter Century Club Members - - - - -	31
Lighter Lines - - - - -	32
Downwords - - - - -	33
Monthly Load Summary - - - - -	33





ALEXANDER OF TUNIS

VISCOUNT ALEXANDER OF TUNIS, who succeeds the Earl of Athlone as Governor-General of Canada, is the seventeenth representative of His Majesty the King to hold this office since Confederation. He is the third son of the Earl of Caledon, and was born in County Tyrone, Ireland, in 1891. From Harrow School in England he went on to Sandhurst and, on graduation, was gazetted as a subaltern in the Irish Guards.

In the thick of the fighting with the Guards Brigade at Mons, on the Marne and at Loos, and later on the Somme front and at Arras, Viscount Alexander showed his capacity for the higher commands in the first great war and was definitely pointed "up". In the interval between the two global conflicts he was engaged in many important staff and instructional duties. He found time to become proficient in the Russian language, and saw some active service as a brigadier on the Northwest frontier of India. In 1939 he was placed in command of the 1st Division of the British Expeditionary Force and was among the last to leave the beaches at Dunkerque. Later, in Africa, in Italy and in the Mediterranean, his counsel and leadership contributed largely to the success of the Allied arms, and before the end of the war he was generally acclaimed as one of the great military leaders of modern times.

Many soldiers with the brilliant reputation of Field Marshall Alexander would have felt resentment at being subordinated to a new commander-in-chief. Such was not the case with the Viscount. As deputy to General Eisenhower, he was unswervingly loyal, and the staunch comradeship between these two great soldiers did perhaps more than anything else to make straight the way for the mightiest co-operative military effort in history.

To many Canadians the appointment as Governor-General in these unsettled times of a brilliant soldier, who is yet no chauvinist, but a student of men and affairs and a decided humanitarian, will have a profound significance. While maintaining the dignity of the Crown—which is the measure of our own national dignity—there is no doubt that Viscount Alexander will be afforded opportunities for giving leadership and support to many causes aloof from politics which

are of vital concern to the people of Canada. Under our British constitution, evolved from the experience of centuries, the Sovereign rules by and with the the advice and consent of his parliament. He is restrained from any arbitrary official act which may be repugnant to his government. On the other hand, the sphere in which the King may employ his personal influence and prerogatives in the cherishing of his people has been sensibly widened, and the same may be said for His Majesty's representative in the Dominion.

Canadians everywhere will welcome Viscount Alexander both as the accredited representative of His Majesty and as an outstanding leader in the fight for freedom, and their good wishes and felicitations will extend to his gracious Countess and their family.

IT BEGINS AT HOME

NOW that we are entering upon a new era of reconstruction and development it is well that we should give attention to the environment amid which we live and work. With this thought in view, all citizens may be expected to give active support to the "beautification" campaign launched by the Junior Chamber of Commerce and the Boards of Trade throughout the Dominion.

Beautification in its wide spheres must be the concern of city and rural councils and planning boards, and, no doubt, considerable stimulus to their activities will be given by the present campaign. In the last analysis, however, much of the work required to make our cities and countryside attractive will fall upon the individual citizen. Painting, renovation, repair of premises and the care of lawns and gardens are all included in the effort he is encouraged to make, and to this will be added the job of keeping things ship-shape after he has got them that way.

No one, of course, has any obligations in these matters beyond what his own pride as a citizen will suggest. It is pointed out, however that he will have everything to gain by keeping his business premises or private home in attractive shape, and probably a good deal to lose by not doing so.

Every country, and, indeed, every community, has its own character and its own way of living, and its adornment should be suited to these. Fundamental to any embellishments are cleanliness and tidiness. A well-groomed town or village, no matter how poor in architectural values, always has a smile on its face.



MANY OF the happy moments at the construction department's convention banquet were recorded by the camera. The gentleman applauding (left) is David Forgan, the Commission's construction engineer, who was chairman. On his left are Hon. George H. Challies, vice-chairman of the Commission, and John Dibblee, chief engineer, operations. Below is shown a section of the gathering.

By The Editor

HYDRO'S front line men—those who do the actual job of building the power plants and other structures which make possible the generation, transmission and distribution of power to home, factory and farm—will be “in the centre” of the Commission's tremendous programme of expansion whose upsurge in employment and industrial activity will be felt in every plant, large and small, in Ontario.

This assurance, from commissioner W. Ross Strike, K.C., was greeted with rousing enthusiasm by a gathering of several hundred employees from all parts of the Province who attended the annual one-day convention of the Commission's construction department in Toronto on March 22.

An event which has assumed ever-broadening significance in the onward march of Hydro, this convention, conducted under the direction of David Forgan, construction engineer, provides an opportunity for renewing “old acquaintance,” for an exchange of ideas and discussion of important undertakings which have reached the final blueprint stage.

Included on this year's agenda of business was an inspection of both the Lineman's Training School and the Commission's Bloor Street Stores. In the evening the

visitors assembled in the King Edward's Crystal Ballroom where, following an enjoyable banquet, they heard from a number of the Commission's top men, messages which reflected Hydro's pre-eminent role in both war and peace and emphasized the magnitude of the construction programme in the days ahead. In addition to Mr. Forgan, who presided, and Mr. Strike, the principal speaker, short addresses were delivered by R. L. Hearn, chief engineer, design and construction; R. T. Jeffery, chief municipal engineer; John Dibblee, chief engineer, operations, and others.

Commissioner Strike told his enthusiastic audience that Hydro faced the greatest programme of expansion in its history. He referred to the plans for power developments at DeCew, Stewartville, Des Joachims and Aguasabon and pointed out that such a programme also involved the building of extensive transmission lines. At the same time, he mentioned the plans for further rural expansion, a frequency changer tie-in with all three districts at Scarboro and an over-all rehabilitation of the entire system, including better voltage regulation.

“Then,” continued Mr. Strike, “there is the construction of a new centre at Islington and, as a crowning chal-



WHEN CONSTRUCTION department employees, from all parts of Ontario, came to Toronto for the one-day convention they had an opportunity of inspecting the Bloor Street Service Centre and the Lineman's Training School at Islington. The photographer got these shots at Bloor Street. TOP LEFT: Visitors inspect coffee urns which are being sent to construction camps. TOP, RIGHT: Another group inspecting equipment. CENTRE, LEFT: A demonstration of the overhead loader. CENTRE, RIGHT: Time out to "sandwich" in lunch. CENTRE, LEFT, and above: A mass demonstration of how a man's heart is reached! BOTTOM, LEFT: No grounds for complaint here! The coffee was good.

lenge to all our ingenuity and initiative, we may face the frequency-change-over in the Niagara district. That, gentlemen, is a programme that should set the pulse of every one tingling with the spirit of adventure and the urge to accomplish great things. To carry through such a programme successfully will require the skill, initiative and hard, honest work from every one of us."

The speaker said that he knew of no other organization in the Province or in the Dominion which had such a programme of expansion immediately ahead of it. Upon that programme, he declared, the further expansion and growth of the Province depended. It was, in fact, the life blood of the Province.

Mr. Strike next directed attention to the employment of returned personnel. He stated 1,218 men and women had left the Commission to enlist and of that number 636 had returned to date and 51 had died in the service of their country. Employees who had enlisted, he continued, had all retained their seniority privileges including pay increases, and during their absence, the Commission had paid both the employees' and the Commission's share into the Pension Fund. The Commission, he said, had taken on 960 returned men not formerly employed by Hydro and they were also planning to take on students most of whom would be returned soldiers, for the summer holiday period. In addition, Mr. Strike stated, it was anticipated that many more returned men would be employed as work proceeded on the big construction programme ahead.

At the outset of his address, Mr. Strike said he thought that every one realized that Hydro had become a very big institution and that it would become very much larger. In a situation like that, he emphasized, they had always to be on the alert that they did not strangle themselves with red tape. He pointed out that electric energy had now become perhaps the greatest necessity they had. Every home, every factory, every farm, every hospital, every public and private building ceased to function when there was no electricity. For that reason they had to lay at the base of the Hydro structure a standard of planning, administration and field work that would get things done with the least possible loss of time and with the minimum of interruption of power under any circumstances.

"This means," declared Mr. Strike, "that whether you are in the office, in the field or working on a new development you will be doing a better job if you are constantly on the watch to keep up the tempo and not let it lag. The construction men have set a high standard in this respect but, unfortunately, we cannot rest on our laurels. We must set our sights even higher."

Always A Place At The Top

In urging all employees to keep their initiative, Mr. Strike remarked: "an employee has a sense of permanency when he gets a job with Hydro, except, of course the commissioners, (laughter) but nobody ever feels sorry for them (laughter). Then, perhaps, too often after a few years that same employee begins to feel that this is a big institution, that you go along just so fast as long as you get your work done reasonably well and from there in you start to coast. Another good man is on the treadmill and the whole organization loses a little impetus it should be getting."

Mr. Strike counselled his audience never to give up trying. The very bigness of Hydro that give one a sense of security and permanency of employment was also the reason that made it seem tough to get ahead. "But never forget this," he said, "that in a big institution there are always more opportunities for the man who never gives up trying to do a better job in a more efficient way. It may bring some disappointments but to the man who won't give up, there is always a place at the top. It is that word of encouragement that I want to pass along to the many younger men who have recently joined the ranks of Hydro from the armed services and to many of our junior staff who may be wondering if the extra push is worth while. We have lost two generations of Hydro personnel, and there are wide open spaces waiting to be filled by competent men and the men in our own organization will fill them as they prove themselves ready for the job. We will do our best to induce the men in administrative positions to encourage and recognize both initiative and hard work."

At another point, Mr. Strike remarked that many Hydro employees were dealing directly with the public and that the reputation of Hydro was raised or lowered by their actions and conduct. They had always to remember, he said, that the other fellow had rights and privileges that he cherished even if sometimes he might be a bit childish or difficult to deal with. "You can always get further with a smile and quiet reasonableness than you can by irritability and bellicose language," he said.

One Of The Greatest Organizations

Mr. Strike said that he hoped his remarks would not be taken as "preaching" for he was easily led into that pitfall. "But," he solemnly and quietly stated, "Hydro to me is one of the greatest organizations on this earth. It has been built by men who planned faithfully and courageously and is facing a great period of expansion, and every one of us will have larger responsibilities to carry. We can make an almost incomparable contribution to the progress of this Province if we will tackle this job with unflagging enthusiasm and with every man at his post pulling his weight. And, gentlemen, I know you have what it takes and that you will give it all in the service of Hydro in the years ahead of us."

In that soft and friendly accent, which bespeaks his Scottish background, David Forgan extended a warm, cordial welcome not only to the members of the construction department but to all representatives of other Commission departments and guests in attendance at the evening banquet which climaxed the day's convention. He said that the event had been held a little later this year in order that more returned men would have an opportunity of taking part. It was, he remarked as his eyes twinkled, "an oasis in the long dry stretch between Christmas and Easter."

Mr. Forgan said that the records of the construction department showed that 217 employees had enlisted in the armed forces—19 in the navy; 154 in the army and 44 in the air force—while a number of others had been

(Continued on page 8)



TOP: Head table personalities at the construction department banquet, left to right: H. J. Muehleman, W. P. Dobson, M. S. Oldacre, M. J. McHenry; R. T. Jeffery, Dr. Otto Holden, George Leacock, R. L. Hearn, and W. Ross Strike, K.C.



LEFT: Another shot taken by cameraman Al. Walker during the proceedings.

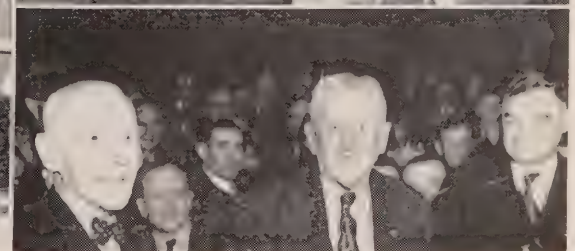
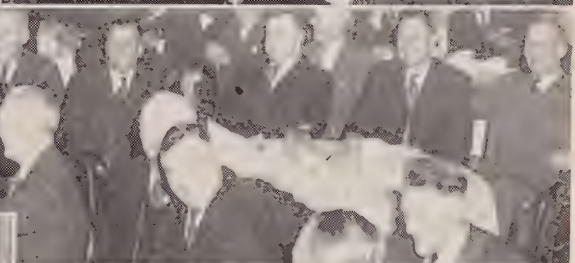
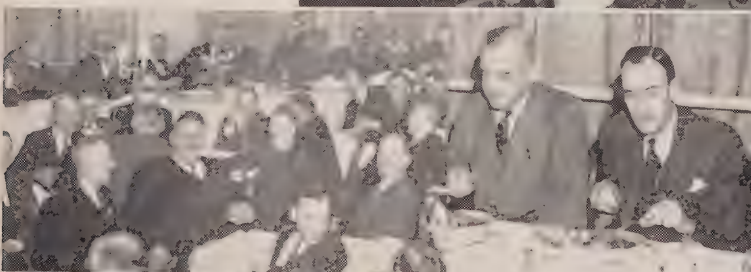
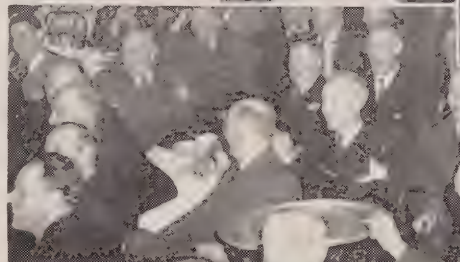
BELOW: John Stark (left) and Jim Scott really didn't need the mike when they "gave" with a capital "G" in a rollicking ditty.



ABOVE: Commissioner W. Ross Strike, K.C., presents a handsome tray to Elie Brunelle, who has served Hydro for 30 years. Bill McKenzie is shown beside Mr. Strike.



RIGHT: It was a good story judging by the smiles of this group.



ABOVE, LEFT: Another section of the crowd, while the inset shows Bert Cooper (left) and Osborne Mitchell.

ABOVE: Three men who, between them, have nearly a century of Hydro service to their credit. They are, left to right: Elie Brunelle, "Red" Burns and Vic Nolan. All received presentations.



BOTTOM LEFT: left to right: C. Carrick, Alex McPherson, J. V. Walters, Wills MacLachlan and Mel Hare.

FOUR HYDRO MEN HONOURED FOR SPECIAL WAR SERVICE

Among those Canadians who have received recognition for special service to their country during the war are four men whose names appeared in the last New Year's honours list and who have now returned to the Commission. They are: Harold A. Smith, electrical engineering department, who was awarded the M.B.E. for special work in connection with radar. Lieut. Smith, R.C.N.V.R., joined up in 1943 and for three years did important and confidential work at St. Hyacinthe, instructing officers in radar and designing radar training equipment. He was discharged last November and is now back in the electrical engineering department.



Thomas Sisson

Thomas ("Si") Sisson, industrial sales engineer in the promotion department, was recently appointed an officer of the Order of Orange Nassau with Swords by the Dutch government. Lieut.-Colonel Sisson, O.B.E., graduated from the Royal Military College in 1934. He enlisted at the beginning of this war as Intelligence Officer in the Queen's Own Rifles, went overseas first in 1941, returned to Canada for further training and went back overseas as captain with the 4th division. Two months later he received his majority and in December, 1944, joined the 2nd Canadian Corps as Lt.-Colonel.

In 1945 Lt.-Col. Sisson was mentioned in dispatches. He was handling corps personnel and transporting certain materials during the speedy attack of the armies through to Holland. In October, 1945, he was awarded the O.B.E. Last December word was received of recognition by the Dutch Government. When asked about this he said that the Dutch people were very appreciative of the way in which the transportation of men and supplies had been handled by the Canadians after the invasion, and that they had indicated then that their government would bestow honours.



Jack Kressler

Another Hydro man mentioned in the New Year's list was Jack Kressler, property department, who was awarded the B.E.M. for special operational research. Jack joined the Commission as a draughtsman in 1938 and enlisted in the R.C.A.F. as a radio mechanic in 1942. Bomber Command decided that his knowledge of draughtsmanship was more valuable than his technical work on radar and he was put back to work at his civilian occupation. He was at Headquarters No. 6 Group Bomber Command, preparing secret maps and analyses of operations. In 1944 he was mentioned in dispatches for his special work.

Then, there was William Durno of the Hydro Research Laboratory who had the unusual distinction of being awarded the Croix de Guerre and Bronze Star, for gallant

and distinguished service during the liberation of France. In July, 1944, during the attack on the Carpiquet Airfields, Sergeant Durno exhibited great courage and daring by crossing open, fire-swept ground many times to carry orders, since the cable had been destroyed repeatedly by shelling. It was said in the citation that this action undoubtedly was an important factor in obtaining the needed artillery support, in allowing the artillery to lay down a more effective barrage and in gaining the final objective. The presentation was made by General De Laffleur acting for General De Gaulle. Sergt. Durno, after three years with the Canadian army, has returned to his job as concrete inspector with the research and testing department. At the present time he is in Christie Street Hospital recovering from an operation.

HYDRO'S "FRONT LINE"

(Continued from page 6)

serving on the home front. To date, he intimated, 67 of the 217 were back working in the old department while 10 or 12 had left "for the less adventurous fields of the operating and other departments." (laughter). Of the number who had served in the armed forces, 8 had been killed in action or had been reported missing. There were 317 returned men from World War II who were newcomers. "We see among those returned men," continued Mr. Forgan, "very promising material—the best sort of material with which to build a sound organization. To all these returned men I say welcome."

Very Happy Relations

The Commission's construction engineer also referred to the very happy relations enjoyed with other departments and he had "a personal word of thanks to the Commissioners and to the executives" for the consideration given to the needs of the construction department.

In a brief and friendly address, Hon. George H. Challies, the vice-chairman, stressed the magnitude of the construction programme ahead and declared: "Let us keep our feet on the ground and we will pull through this transition period."

R. L. Hearn, chief engineer, design and construction, who introduced Mr. Strike, who, he noted, was smoking a new brand of English tobacco, made brief reference to the construction programme and said that the esprit de corps of the construction department was an example to everyone.

Very Necessary Function

R. T. Jeffery, chief municipal engineer, remarked that the construction department's event had become a very necessary function in the life of the Commission. He said that the municipal department appreciated the job which was being done by construction men in bringing power to districts that had not yet been reached.

In his brief address, John Dibblee, chief engineer, operations, stressed the value of teamwork and of getting along in a friendly way with one another. "That," he said, "is the problem of the world—how to work together in a friendly spirit." Mr. Dibblee also congratulated Mr. Forgan for "fostering this gathering which has become a Hydro institution—an event that brings us together in teamwork."

ROYAL CITY



THEN AND now! The upper view of Guelph's business section was taken over 80 years ago. The lower picture, taken recently, shows one of the busy thoroughfares in this enterprising city.

By Grace J. Carter,
Assistant Editor, *Hydro News*

SOME call it "The Royal City of Opportunity," but it's generally known as Guelph—a city which has been served by *Hydro* since 1911.

The founder, John Galt, a Scottish author and a commissioner of the Canada Land Company, probably had "high" ambitions which, over a period of years, have materialized for today Guelph is not only picturesquely

located on a number of hills but it can be described by the adjectives "enterprising" and "progressive."

Looking over some historic records, *Hydro News* learned that apparently Galt and his party stopped one rainy evening—April 23, 1827—at an Indian's shanty on the bank of the river Speed. In this locality he selected a large maple tree, took an axe and made the first cut into

the trunk. This marked the origin of the settlement which he named Guelph in honour of the then reigning British royal family of King George IV.

It has been claimed that when the historic tree was felled, one of the party placed his hand with fingers outspread on the freshly cut stump, and eventually they patterned the streets of Guelph after that plan. At any rate, the city streets are laid out like the fingers of a man's hand.

The site of the new settlement was well chosen as the river afforded ample water power; there was plenty of timber for building and the soil was rich for farming. In addition, the rolling hills were ideal for pastoral farming and before long the hillsides were stocked with Southdown and Leicester sheep, as well as cattle and hogs.

A pioneer in the policy of municipally-owned public utilities, Guelph's success was assured almost from the beginning, and it was incorporated as a town in 1851 and as a city in 1879. Today it stands as a highly industrialized, educational and institutional centre backed by sound civic financing and good living conditions, which give an overall atmosphere of quiet prosperity.

Main Street of Ontario

Often designated as the "Main Street of Ontario," Guelph is located 60 miles west of Toronto, 28 miles north of Hamilton, 76 miles from Niagara Falls and 84 miles south of Owen Sound. This makes it a hub of activity for many main and intersecting provincial highways. It is also served by the Canadian National and Canadian Pacific railways. A unique feature of this municipality is that it owns 16 miles of railroad, which is leased to, and connects Guelph with, the Canadian Pacific Railway. And it is reported, its original investment has been returned more than ten

times since 1887, thus reducing the municipal tax rate every year since its inception. It is also said that this city has the lowest tax rate in Ontario.

This flourishing centre of some 23,000 inhabitants has been served by Hydro since 1911 when the first Light Committee comprised Samuel Carter, chairman, mayor John Newstead and George Sleeman, commissioners, and John Yule as secretary and manager.

At that time the load was approximately 2,500 horsepower. Today it is well over 13,600 horsepower and serves 5,769 domestic, 811 commercial and 140 industrial consumers over a network of 95 miles of transmission lines. There are ten substations in this area which operate on a loop system with 13,000 and 2,200 volts entering and leaving each station. This means that any unit can be cut out in case of trouble without interfering with the rest of the system. Guelph claims to be one of the first cities to have used the loop system.

Low Hydro Rates

Prior to Hydro, the cost of electric energy in this municipality, according to the records, was eight cents per kilowatt-hour. Since the inauguration of Hydro there has been a steady reduction in the cost of service to consumers. In 1913, with an average domestic monthly consumption of 17 kilowatt-hours, the average cost was 5.2 cents per kilowatt-hour. At the present time the average monthly domestic consumption is 167 kilowatt-hours, and the average net cost per kilowatt-hour is 1.1 cents. In addition to these low domestic rates, the rates for industrial power consumers ranks with the lowest in Ontario.

A sound economic policy has been followed by the

(Continued on page 12)



WHEN DRIVING along the highway into Guelph the visitor cannot fail to be impressed by the beautiful grounds at the Ontario Reformatory. Here may be found several artificial lakes surrounded by many varieties of colourful flowers, and the main building (shown above) can be seen in the background.



HENRY MODELAND (left) and Roy Reed were busy in the meter room when this shot was taken. On an average of 24 commercial meters are tested weekly at this office.



IN THE upper picture is a line gang putting in a pole for a new 26,000 volt line. The three operators (lower) in the billing machine room are: Alda Radcliffe, June Neil and Alice Anderson.



A CUSTOMER steps up to pay his bill to cashier Albert McGinnis, while Dorene Rosewell keeps her eyes "glued" to the typewriter.



JOE HEEG (left) superintendent of line construction, and Mervin Weiler, substation superintendent, were snapped outside substation 9 on Bristol Street.



WILLIAM J. BISHOP, secretary and superintendent of the Guelph Board of Light and Heat Commissioners, is shown with Frances Hague, treasurer. Wonder what's so interesting?



THIS GROUP taken in the general billing office includes: Shirley Lloyd, Evelyn Livingstone, Sadie Robinson, Louise O'Donnell, Cora Hicks, Mary Klein, Iona Burrows and Jim Gow.

ROYAL CITY

(Continued from page 10)

Guelph Board of Commissioners, since its inception, with the result that the last capital debt was retired in June, 1939.

With the aid of low-cost Hydro power, this enterprising city, has become essentially a manufacturing centre, with a diversity of industries. Some of the products manufactured are: mercerized cotton, felt hats and shoes, women's dresses, worsted yarns, carpets, leather goods, pickles, jams, dairy products, electrical farm equipment, stoves, furnaces, household appliances, machinery, motor bodies, insulated wire, leather goods, limestone, lawn mowers, radiators and many others.

Some of the larger users of electrical energy include the International Malleable Iron Company Limited; Guelph Carpet Mills Limited; Leland Electric Limited; Guelph Stove Company Limited; Gilson Manufacturing Company; Federal Wire and Cable Company Limited; Taylor-Forbes



OWING TO the acute housing shortage, Mrs. Glyn Kestell, secretary-treasurer of the Ontario Municipal Electric Association, looks as though she might be contemplating the rental of the above replica of the first house built in Guelph in 1827.

Limited; Callander Foundry and Manufacturing Company Limited; and Canadian Gypsum Company Limited. This by no means completes the list, but is all that space permits recording.

Attractive Grounds At O.A.C.

It is not likely that anyone visiting this community would leave without seeing the attractive grounds, of at least 1,000 acres, and fine buildings of the Ontario Agricultural College which was opened over 70 years ago. Having won world renown, the O.A.C. continues to give instruction in all phases of technical and practical agriculture and home economics. It has excellent herds of many breeds of livestock and has thousands of field-crop experimental plots. Here also are the Ontario Veterinary College, and Macdonald Institute for Ladies. These colleges are affiliated with the University of Toronto.

Much of the charm and distinctiveness of Guelph's architecture is that many of the buildings are constructed



DRIVEN BY a 40-horsepower motor, the above braiders are used for applying cotton braid to rubber covered wire.

of limestone quarried in the neighbourhood. There are also many fine homes, schools, churches and several hospitals, including the Homewood Sanatorium which is beautifully situated on the crest of a hill. Practically all the homes have well-kept lawns with flower and vegetable gardens, which add a certain attractiveness not always found in city life.

Many facilities are available for both outdoor and indoor recreation. For those who follow the little white "pill" there are two golf courses conveniently located. Parks and supervised playgrounds provide facilities for baseball, hockey, tennis, skating, skiing, curling, bowling, badminton, swimming and boating. There are also theatres, bowling alleys and indoor skating rinks.

Outstanding Canadians

Among the outstanding Canadians who claim this district as their birthplace are: Colonel George A. Drew, prime minister of Ontario; Edward Johnson, well known tenor and managing director of the Metropolitan Opera at

(Continued on next page)



THIS LOVELY sylvan setting is just one of the many picturesque retreats in the well-kept grounds at the Ontario Reformatory.

ROYAL CITY

(Continued from previous page)

New York city, also chairman of the board of directors of the Toronto Conservatory of Music; the late Lieutenant-Colonel John McCrae, physician, soldier and poet, who wrote the immortal poem, "In Flanders Fields"; the late Arthur C. Cutten, grain market operator; the late James J. Hill, internationally known railroad builder; the late John Ross Robertson, editor of the Toronto Evening Telegram; John McLean, internationally renowned explorer, as well as many others.

Fine Co-Operative Spirit

Among those who will long be remembered for their fine spirit of co-operation while on the Guelph commission are: the late J. J. Heeg, who was superintendent and secretary from 1907, before Hydro took over, until 1936; the late J. S. Watt, who served in the same capacity from 1936 to 1944; and the late J. W. Oakes who served on the commission from 1926 to 1944.

Hydro Ably Administered

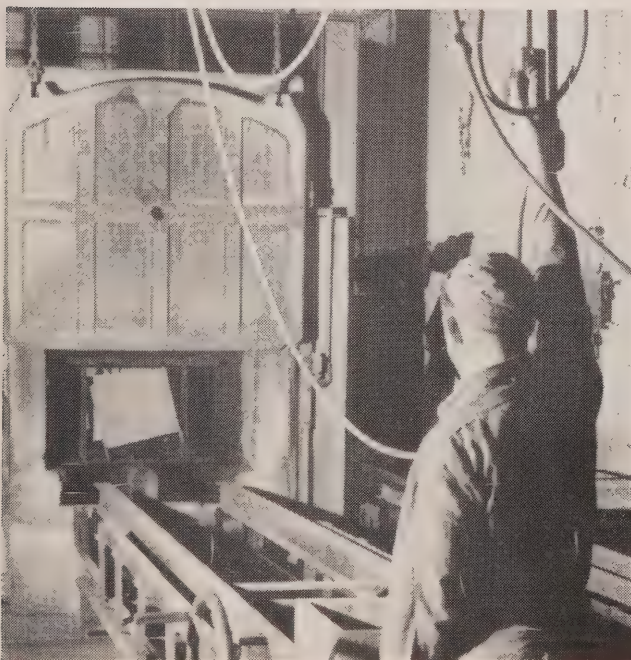
Hydro, the driving force behind any industrial community, is ably administered by the Guelph Board of Light and Heat Commissioners comprising David E. Kennedy, chairman; mayor Gordon Rife and Hugh J. McHugh, commissioners; William J. Bishop, secretary and superintendent, together with the assistance of a staff of 62.



GUELPH IS very proud of the attractive grounds and exceptionally fine buildings at the Ontario Agricultural College, which is claimed to be the largest and most notable institution of its kind in the British Empire. Above is shown the administration building.

ARTHUR S. WILSON DIES

ARTHUR S. WILSON, superintendent of the Commission's carrier circuit equipment, died recently at the Private Patients' Pavilion, Toronto General Hospital, in his forty-sixth year, following a short illness. Mr. Wilson graduated from the University of Toronto as an electrical engineer in 1921 and joined the staff of the Commission a year later. He worked in the vicinity of Hamilton until 1937, when he was transferred to Toronto to assume the position he held until the time of his death. Surviving are his widow and three small children, Margaret, James and John.



ENAMELLED ELECTRIC stove door backs are baked in the above furnace at temperatures ranging from 1500 to 1600 degrees Fahrenheit.

HE LOST HIS DISCOUNT!

A gentleman, now living in Chicago, has lost his discount on his final Hydro bill for \$2.87. He missed it by just about twenty years, the date on the bill being October 28, 1926.

His brief accompanying letter to the Toronto Hydro-Electric System reads as follows: "So sorry this bill has not been paid but it had been put away with things that have not been disturbed in all these years. Please accept our apology."

SPRINGTIME IS "SPLICING" TIME FOR SOME OF HYDRO'S YOUNG MEN



A GLIMPSE of the cable splicing class hard at work in their classroom. Right, Norman Caird and Harry Duff are busy making a straight splice in a 19-gauge communication cable.



IF you happen to want anything done in the way of splicing (at this season after all, a young man's fancy is supposed to turn to such matters!) you may, with confidence, call on any of the nine stalwart new graduates of the Commission's splicing school, who are now qualified to do this job. However, you will find that their sort of splicing has very little to do with matrimony. It is, in fact, a technical trade that is important in Hydro operations. This particular training school was organized as result of a shortage of trained men to look after rapidly-expanding new construction as well as normal cable maintenance.

A cable, properly speaking, is the communication channel selected where a large number of circuits is re-

quired, between two points, usually between transformer stations or generating plants. The cable may be used for telephonic service, which is the popular idea of its purpose, or it may be used for transmitting an electrical impulse from one power station to another. These impulses are used for remotely controlling equipment or pieces of apparatus in a station from a distant point. The rapidly increasing use of "remote control" has now progressed to the point where entire stations operate the year around without attendance except for periodic checkups and adjustment.

Before 1942, Hydro's cable work was done by crews hired from the Bell Telephone Company, working under

(Continued on page 30)



HERE ARE the members of the cable splicing class. Back row, left to right, "Paddy" Dudley, Norman Caird, Don Croskery, Keith Jackson, and Al. Sherriff; front row, Harry Duff, Joe Hager, H. C. Carrique (assistant instructor), Fred Oram and Ivan Belford. Jim Gammage, the other member of the class, was not present when this photograph was taken.



CHAPTER III—STORY OF THE CANDLE

By Mildred C. Redmond, Hydro News

How many miles to Babylon?

Three score and ten.

Can we get there by candle-light?

Yes, and back again.

THIS and other rhymes we chanted in our childhood so that candle-light became the official light of romance. This is perhaps one reason that of all primitive forms of lighting, the candle is still very much in use for special occasions. Besides, the candle is actually an efficient light source. It has been called not only a light source but a complete lighting plant in miniature, with no waste parts. The very name "candle" has been taken over as the unit of reckoning light intensity. It is, to be exact, based on the light given by a pure spermaceti candle weighing one-sixth of a pound burning at the rate of 120 grams per hour. Many more brilliant and efficient light sources have been discovered since the days of the candle, but the intensity of even the most powerful, modern searchlight is reckoned in terms of so many million candle power.

We have taken over the word in other ways, too, and the number of times it appears in homely phrases shows the part it has played in the life of the people—examples come quickly to mind—"The game is not worth the candle;" "She can't hold a candle to him;" "He is burning his candle at both ends," and so on.

Tradition Associated With Candle

There is still a considerable sentiment for these small "living lights" and the sophisticated, with all modern lighting at their disposal, still sometimes choose to dine by their mellow lights. There is a tradition as well as sentiment attached to the candle, especially in religious ritual. The candles burned on the altars of the Catholic church are still made of beeswax as they have been for many hundreds of years and are still blessed on Candelmas

Day. Candles also play a part in Buddhist and Mohamadan services.

The candle does not share the ancient lineage of the oil lamp. It is, rather, the descendant of the torch, splinter light and rush light. Although it doesn't go back into the dawn of history, it was known and used by the Romans. It is uncertain when it first originated. There is a theory that the Phoenicians first used it and introduced it to Byzantium. However, their use there died out under Turkish rule and they didn't appear again until the 12th century. The famous seven-branched candlestick of the Old Testament is not really a candlestick at all but a group of oil lamps. The candle came into its own, however, in the Middle Ages in Europe and was still in common use into the 16th, 17th and 18th centuries.

Home-made Products

Ordinarily, candles were made of tallow and the use of wax candles was kept almost exclusively for the churches. The tallow candles were at first home-made products. In early manuscripts there are references to the monasteries saving all their kitchen fats for the making of their own candles. The tallow would be melted and strained and then cotton or flax fibers would be dipped in it repeatedly until they were coated thickly enough for use. In the very earliest candles the pith of rushes was used for wicks.

The dipping method goes back to the Romans and was the usual method used all during the Middle Ages and after. After dipping, the candles were hung in a loft or cellar to harden and whiten. In most cases, each household or monastery made its own candles. Sometimes, an itinerant candle-maker would be called in to make a supply. In Paris in the 13th century there was a guild of candle makers who went from door to door to make the tallow candles, the wax candles were in the hands of a separate guild. In London, too, the guilds were separate.

The Worshipful Company of Waxchandlers dates from 1358, the charter of incorporation having been given in 1484. By this time wax was a little cheaper and so more commonly in use. The tallow chandlers received their charter in 1462. That the guilds kept a watchful eye on their members to see that a certain standard was main-

tained is shown by the fact that adulteration of the wax was a formal offence punishable usually by forfeiture of a wax supply.

Candles For Every Occasion

Church accounts of the day show elaborate lists of candles for every possible occasion and place—wax candles for the altar, candles to be burned before images and in chantries, tapers and large candles for funerals and plain tallow candles for the ordinary lighting of the church and domestic offices. The cost of these church lights was met largely by the funds provided by various guilds attached to the churches of the town. Candlemas day, February 2nd, from the 11th century on, was the day on which the candles were formally blessed. These wax candles for the church were made by pouring the melted wax over the wicks. This method is followed to this day for the wax candles to be used for religious purposes.

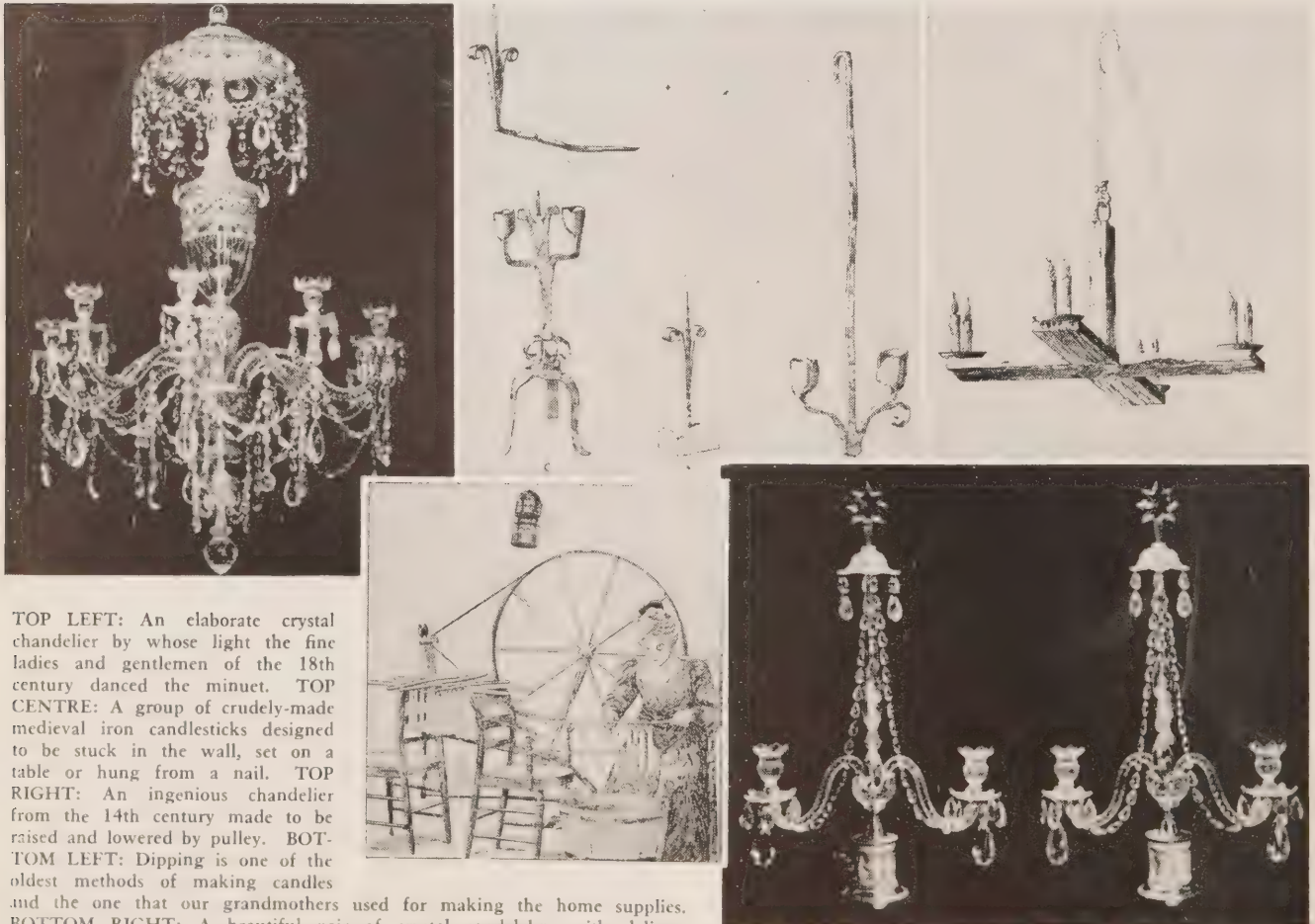
The more plebeian tallow candles remained in use until well into the 19th century. It is recorded that within living memory they were used in the Cornish tin mines. Wax candles were regarded always as the light of the well-to-do. There is a recorded item from a hotel bill from an early Victorian inn “for a gentleman who called himself a gentleman, wax lights, five shillings.” If you were not

a “gentleman” you went to bed with a sputtering, smoking tallow candle or did without.

The first variation from tallow and wax was made when whale fishing became popular in the 18th century. Spermaceti, a crystalline substance from the head of the sperm whale, came into use for candles near the end of the century. The crude material was separated by several filtrations and pressings and then purified by chemical treatment.

Other materials were experimented with but it was not until 1850 that a revolutionary discovery was made—paraffin. First produced from Derbyshire petroleum, it was not until nine years later, when it was discovered in abundance in America, that it was produced on a large scale. Paraffin is a by-product of refining plants and is a mixture of solid hydro-carbons. All candles nowadays are made of this product and are moulded by a machine that can turn them out in quantity. Stearine is used with the paraffin because it increases the rigidity and decreases the brittleness. Wicks are now made of cotton yarn braided or plaited by machinery and chemically treated to aid in complete combustion when the candle is burned.

As for the holders for candles or candlesticks, they vary as widely as the periods and places in which they have been used. There have been, in general, two main cate-



TOP LEFT: An elaborate crystal chandelier by whose light the fine ladies and gentlemen of the 18th century danced the minuet. TOP CENTRE: A group of crudely-made medieval iron candlesticks designed to be stuck in the wall, set on a table or hung from a nail. TOP RIGHT: An ingenious chandelier from the 14th century made to be raised and lowered by pulley. BOTTOM LEFT: Dipping is one of the oldest methods of making candles and the one that our grandmothers used for making the home supplies. BOTTOM RIGHT: A beautiful pair of crystal candelabra with delicate Wedgwood bases. They are of English workmanship of the 18th century.

(Photographs courtesy of the Royal Ontario Museum).



(Photograph courtesy of the Royal Ontario Museum).

THESE HANDSOME silver candlesticks graced the altar of a 17th century Spanish church. They bear the name of their maker, one Don Antonio de Vildosola.

gories, the socket and the pricket. The socket, as the name implies, has a socket into which the candle end is inserted. The Romans used the socket design mostly and their candlesticks look remarkably like the ones we use today. They used a variety of materials, metal, clay or wood.

Pricket Holder Was Favoured Design

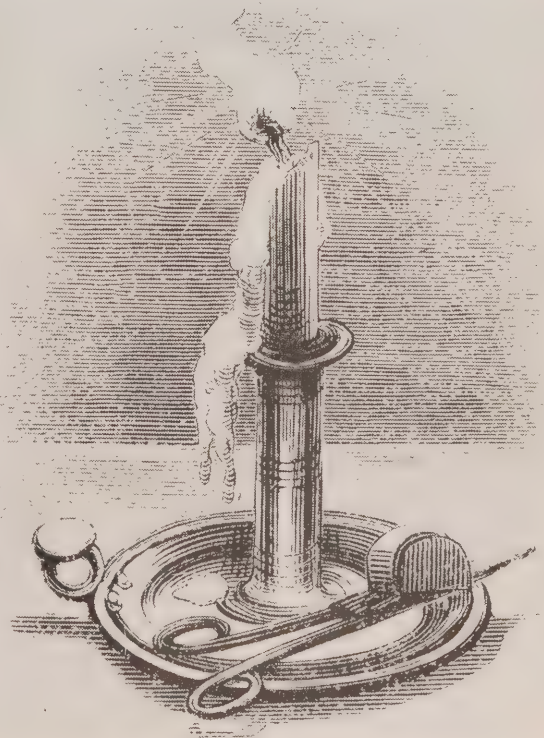
The pricket is so called because instead of a socket it has a spike upon which to impale the candle end. It is of oriental origin and it is believed that Dutch and Italian traders brought it from the East. When the candle became the most common source of light in the Middle Ages it was the pricket holder that became the favoured design. It was usually made of iron or bronze; sometimes the designs were elaborate but more often it was a strictly utilitarian affair made by the local blacksmith.

The houses of western Europe were lit by candles in their pricket holders until into the sixteenth century. Occasionally, someone thought of an improvement that was later generally adopted. For instance, in the sixteenth century someone had the bright idea of putting a metal collar around the wick to catch the drip. However, the real change came with the Renaissance. The new era was one of a higher standard of living and good taste and the candlestick soon reflected the modes and fashions of the times. The craftsmen of France, Italy, England and so on vied with each other in making beautifully designed candle-

sticks, mostly socket now, in silver, pewter, brass or crystal. For the very wealthy there were elaborate crystal chandeliers that glittered with hundreds of wax candles on state occasions. No wonder the blue-blooded ladies fainted frequently; the heat in those candle-lit ballrooms must have been overwhelming.

Lighting in America in the colonial period followed much the same pattern as in the mother countries and again it was the story of the adaptation of materials at hand. Apparently, it was the general rule that oil lamps were used for every day but that candles were brought out for "company." The thrifty housewife was expected each fall to make up and store away a large enough supply to do the house for the year. A purchased candle in 1634 cost fourpence which was considered the height of extravagance.

There were very few cows in the early days, the first cattle imported from England were three cows in 1630, so that there was little fat or tallow for making candles. However, Yankee ingenuity came to the rescue and candles were made from bear and deer fat. Another substitute for tallow was found in the wax from the honeycombs of the swarms of wild bees found in crevices of the rocks and in decayed tree trunks all through the New England forests. Also the fruit of the bayberry made practical as well as sweet-smelling candles; they were found on low bushes



THIS CANDLESTICK is typical of all those that have lighted most of the civilized world at one time or another since the days of the Phoenicians. With it is a pair of snuffers to keep the wick trimmed and tidy.



CANDLE
LIGHT at
Christmas
time still
makes young
faces glow
with pleasure.

along the edges of the salt water in the sand dunes.

Streets Lighted By Candles

Spermaceti was put to use when it was discovered how much better candles it made than tallow and the other fats. The flame from a spermaceti candle gave almost double the light of the tallow dip. In 1730 a few streets of Boston were lighted by little square tin lanterns enclosing spermaceti candles.

Thanks to the present methods of processing and manufacturing, our candles, when we use them for special occasions, burn with clean, bright flames. Our grand-



CANDLE MAKING is a skilled and ancient industry. This picture shows a worker trimming the finished candles in a modern factory.

parents were not so fortunate. The tallow candle must have been anything but pleasant to have in a closed room, it sputtered and smoked and needed almost constant attention. It was not considered the thing in polite circles to nip off the burned wick with the fingers, instead there were special scissors provided, called snuffers.

Incidentally, an amusing proof of how much our ancestors lived "in the dark" has been worked out; in order to have had the equivalent of a present-day, twenty-eight cent, one hundred watt bulb they would have had to light 25,900 candles, which, at the rate of three for five cents, would have cost \$431.00!

One of the most picturesque uses to which candles are put nowadays is the traditional festival of Saint Lucia in Sweden. This Italian saint has been adopted by the



FROM ITALY of the 17th century come these three brass pricket candlesticks. They were probably used on church altars.

(Photograph courtesy of the Royal Ontario Museum).

country of the north and her day is awaited more eagerly by the children than Christmas itself. In the early winter dawn of December 13th, a daughter of the home dressed in white robes and wearing a wreath of candles in her hair, glides into each bedroom of the sleeping household and leaves behind her a lighted candle, a pot of steaming hot coffee, a plate of cakes and a pile of small gifts.

In America the children still jealously keep their candle-light birthday cakes and their candle-lit jack o' lanterns at Hallowe'en and it will be a long day before even the mighty electric light can replace them.

NO LET-UP IN DEMAND FOR POWER IN ONTARIO

Addressing Canadian Manufacturers Association, Dr. Thomas H. Hogg Reviews Plans For
Developing Additional 537,000 Horsepower in Next Five Years — Stresses Fact
That Hydro Rates Have Decreased While Costs Of Other Commodities
Have Increased — Sees Possible Need For Stabilizing Present Low Rates For Some Time to Come



WHILE DR. Thomas H. Hogg, chairman of The Hydro-Electric Power Commission of Ontario, was addressing a luncheon of the Canadian Manufacturers' Association, Ontario Division, in London recently, the London Free Press cameraman flashed this photograph. The other guests at the head table, from left to right are: London's mayor, Fred McAllister; J. C. MacFarlane, past president of the C.M.A.; A. R. Ford, editor-in-chief of the London Free Press; Hugh G. Hilton, vice-chairman of the Ontario Division, C.M.A., and the general manager of the association, J. T. Stirrett.

POINTING out that today the use of electricity was the measure of industrial progress, Dr. Thomas H. Hogg, chairman of The Hydro-Electric Power Commission of Ontario, told the Canadian Manufacturers Association at a luncheon meeting in London on April 25 what Hydro was doing to provide increasing supplies of power for consumers in the province and called for co-operation and understanding in order that the benefits from various undertakings might be fully realized.

The most important means that could be adopted to increase productivity, and, therefore, wealth, Dr. Hogg stated, was by increasing the amount of power employed per worker. This was entirely borne out by statistics. A study of productivity in the United States showed that over a 40-year period, from 1899 to 1938, when the horsepower used per worker increased three times, the resulting manufacturing output per man-hour was also trebled. Supporting these figures, too, was a statement made by Dr. Hogg at an earlier period in his address when he referred to Hydro's contribution to the war effort. This, he suggested,

was reflected in the magnificent showing made by Ontario plants, which were regularly and continuously supplied with electric power for their war-time requirements.

Demand For Power Maintained

Since the war there had been no let-up in the demand for power in Ontario. This province was now using four times the power per capita that was employed in Great Britain and twice the power per capita used in the United States. Everything pointed to the fact that the continued prosperity of the Province was bound up in the use of electricity, and how to keep this "good thing" going and provide for the increasing demand that seemed likely to arise, was, the speaker said, the problem that confronted the Commission at the present time.

Six years of war, Dr. Hogg said, had imposed a severe strain on the Commission's physical structure. Much attention would have to be given now to the rehabilitation of equipment. There was a large backlog of heavy maintenance that it was essential to proceed with at the earliest

(Continued on page 20)

A. S. L. BARNES PASSES: DEvised HYDRO MOTTO

**Engineer And Noted Scholar—Joined Commission
In 1911—Was In His 71st Year**

With the name of A. S. L. BARNES, general engineer at the Commission's laboratories, who died suddenly on April 13 in his 71st year, is associated Hydro's now well-known motto "Dona Naturae Pro Populo Sunt."



This fact is recalled in a letter from Mr. Barnes' son, A. S. L. Barnes, Jr., to J. H. Caster, president of the Hydro Quarter Century Club.

"Father, as you know," he writes, "was a conservative English gentleman and throughout his life refused to wear pins of any kind with one exception—that of the Quarter Century Club of which he was inordinately proud. He was proud not only of the pin but of

the fact that it marked him out as a member of a group of men whose diligence and long service had proved their dependability as servants of the people.

"Dona Naturae Pro Populo Sunt" was the motto he devised for the Hydro crest many years ago. "May those who come after strive as valiantly toward this end as the members of your club whom he was proud to call his friends."

An interesting sidelight upon the early association of Mr. Barnes with the Commission has been supplied by W. H. Villiers of St. Catharines, who, in the early days, was, for a time, secretary to Dr. F. A. Gaby, then chief engineer. Mr. Villiers had been given the task of creating a coat-of-arms and recalls that, "Mr. Barnes—gave me most valuable help, and I am sure it was he who supplied the motto." He further states: "it was natural that we should turn to Mr. Barnes for the motto, as I remember he was a much better Latin scholar than most of us!"

Mr. Barnes was born in England and received his training in engineering at the Manchester Municipal College of Technology. From 1900 to 1910, he served as chief of electrical engineers at Gibraltar, the gateway to the Mediterranean.

The year following, he joined the staff of the Commission as assistant engineer and helped promote many new developments in the electrical field. Because he was widely read on technical matters and a master of the English language, Mr. Barnes was often called upon to prepare specifications for technical reports and other data.

He is survived by his widow, a daughter Margaret, in Rugby, England, two sons, James of Ottawa and Alfred, Toronto.

NO LET-UP IN DEMAND

(Continued from previous page)

possible date in order to place existing equipment in first class operating condition. At the same time, it was necessary for the Commission to engage in further power developments to provide for the requirements of the immediate future.

Dr. Hogg reviewed the construction plans of the Commission which aimed to develop an additional 537,000 horsepower during the next five years. These were designed to meet not only the future demands for power by industry but the greatly increasing demands for electrical services in the urban home and on the farm. Related to the water-power developments and part of the over-all scheme was a programme for the consolidation of transmission and distribution facilities throughout the province which called for an immense amount of new construction; and tagged to this was the work which would be involved if Hydro decided to change over from a 25-cycle to a 60-cycle frequency in Southern Ontario.

Frequency Change

Hydro, the speaker stated, was big enough and sufficiently well-equipped to carry out all this development providing it received the necessary co-operation. That, it was inferred, involved patience on the part of consumers while work was proceeding, and also, on their part, too, of a certain amount of planning and preparation so that they would be able to make the fullest use of new power when it became available.

Referring particularly to the change of frequency in Southern Ontario, now under advisement, Dr. Hogg had this to say:

"The problem of supply of 60-cycle power in the 25-cycle area is not difficult technically and presents no economic problem provided it can be accomplished at low growth speed. By that I mean if all new load growth could be supplied at 60 cycles instead of at 25 cycles, then the Commission's power costs would not be greatly increased because the savings in the cost of transformation and other equipment would tend to offset the increased cost of transmission. This, however, is an ideal condition which cannot be practically envisaged. It is, however, possible for the Commission to supply all new power at 60 cycles and effect a gradual change-over of a large part of its existing 25-cycle facilities without any major change in the wholesale cost of power to municipalities—provided growth in use continues without any major set-back and conversion can be accomplished stage by stage in an economic manner."

No Great Technical Problem

The problem of the supply of 60-cycle power by the municipality to the consumer, the speaker added, likewise presented no great technical difficulties, but the time factor, whether a partial change-over were made initially or a complete change-over made all at once, created a variable cost factor which was now receiving the careful consideration of the Commission. With regard to the consumer's readaptation of his own equipment and appliances Dr. Hogg's opinion was that it would be inequitable to ask consumers individually to bear the whole cost of the change-over of their own equipment since all would alike share the benefits, and these would not necessarily be in

(Continued on page 30)

DOWN THROUGH THE YEARS

ELECTRICAL HISTORY—PART III

By Herbert C. Powell

IN Electrical History, Part I, (Hydro News, March, 1946) the history of the period 1600 to 1800 was outlined. In Part II, April issue, some highlights of the lives of Faraday, Thomson (Kelvin), and Maxwell, three outstanding scientists of Great Britain, were presented.

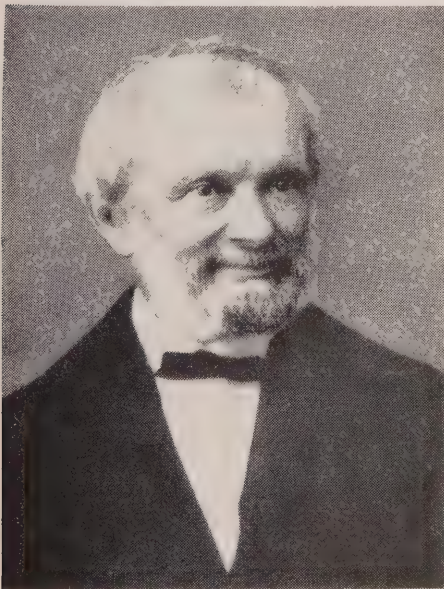
In this third instalment, you will find some interesting facts about five prominent electrical pioneers of Europe—Oersted, Ampere, Ohm, Gauss and Weber.

Hans Christian Oersted, (born in Denmark, 1777, died 1851), announced his great discovery of electromagnetism in 1820 at the age of 43. His father operated an apothecary shop, where Oersted, when 12 years old, began to work with chemical apparatus and to enjoy experimenting. He and his younger brother studied together the wonderful things of nature and science, and were assisted occasionally by a private teacher. They were successful in entering the University at Copenhagen. Oersted graduated at age 22 as a doctor of medicine and became manager of an apothecary business. But he traveled widely among the universities of Europe meeting the outstanding scientists, observing great varieties of scientific experiments. In 1806, age 29, he was appointed professor of physics at the University in Copenhagen. He made a second long tour visiting scientific laboratories, specializing

in electrical ideas and problems. By 1820 he had reached the point where he published the results of his research in obtaining magnetism from electricity, sending printed copies to all his friends in Europe and Great Britain. This information produced as much surprise as Volta's electric cell, source of electric energy, 20 years before. Throughout his 74 years of life, he made and retained friends, he studied and experimented constantly, learning from everyone he met, but, at the same time, he gave his ideas and information freely to others, with the result that on his third long tour, he received many honours and recognitions of his scientific discoveries.

Ampere's Solenoid Coil

Andre Marie Ampere, (born 1775 in France, died 1836) had been doing research work in electricity when in 1820 he received Oersted's report on electro-magnetism. This was just what he needed to complete his experiments on his theories of electric current and electro-dynamics. So in 1820, at age 45, Ampere published his report describing electric current and demonstrating the difference between electric tension (pressure) and the flow of electric current (quantity). He clearly explained the difference between stationary electricity (electrostatics) and moving electricity (electrodynamics). He also discovered that electric currents flowing in parallel conductors in the same direction attract one another, whereas if flowing in opposite direc-



WILHELM WEBER



ANDRE MARIE AMPERE



HANS CHRISTIAN OERSTED



GEORGE SIMON OHM

tions repel one another. He bent wires in circular form with many windings, through which he passed the electric current. He gave the name solenoid to this kind of coil, and found that these coils act upon one another in the same way as pieces of magnetized iron. The coil became an electromagnet when the current flowed, and lost its power when disconnected from its source of current. These principles became the basis of all future developments in the use of electromagnets for telegraph and many other applications.

Ampere's life was not a happy one. His father was a merchant of Lyons, France, who retired to the country. Without the advantage of a mother's training, Ampere's father attempted to make up for it and taught his son as much as possible. Ampere was alone most of the time, studied books, acquired a vast knowledge of science, nature and mathematics. When he was 18, his father was brutally murdered as an aristocrat in the French revolution, so Ampere wandered for a year, dazed and planless. He became interested in botany, nature study and poetry. He taught physics and mathematics in several schools. He married at age 24 but his wife died four years later. He became professor of mathematics in Paris under the famous scientist, La Place, where he carried on his experiments which made his name live forever. He married again, but apparently he was not happy. His disposition was somewhat childlike even up to his death at age 61.

George Simon Ohm (born 1789 in Bavaria, died 1854), carried on studies in electricity based on discoveries of

Oersted, Ampere and others, and by 1827 he announced the results of his work on the relations of electromotive force, electric current and resistance to the flow of current. This became known later as Ohm's law. Ohm made use of the discovery made in 1821 by Seebeck (1770-1831) that a circuit formed of different metals deflects the magnetic needle as soon as temperature differences exist in it. Ohm obtained a constant current by keeping one point of his circuit contacts in boiling water and the other in ice, using a simple instrument (galvanometer) to measure the current flowing in the circuit. He then studied the influence of the current upon various lengths, sizes and materials of conductors. He found that the resistance of a conductor is proportional to its length, and inversely proportional to its cross-section and to its conductivity (ability to conduct the current).

Ohm's mother died very early. His father, a master mechanic, gave him a careful education, helping him by studying physics and mathematics along with his son at great self sacrifice to himself while working long hours every day. At 16, Ohm entered the University at Erlangen, Bavaria, gave up at the end of two years for lack of money, but finally graduated. He taught in various schools, but had a great ambition to teach in a University. For ten years before 1827 he taught in a school in Cologne, and, at the same time, experimented in electricity. His published report in 1827 caused a sensation among scientific men resulting in honours and recognition from nearly all sections, but not from Bavarian authorities. He expected an appointment on the staff of a university, resigned his position, and waited five years for the authorities to act. In the meantime he suffered poverty and disappointment, then was obliged to accept a position of teaching in a school at Nuremberg, where he remained 16 years. Recognition gradually came, and finally his ambition was gratified by an appointment at age 60 to the University at Munich. He never married and his tastes were simple. He died at age 65. His name will be remembered by Ohm, the electrical unit of resistance, and by Ohm's law.

The two names, Gauss and Weber, are remembered together because they worked as a wonderful team in originating the system of magnetic and electrical measurements now in use.

Gauss Became Great Astronomer

Karl Friedrich Gauss (born 1777 in Hanover, died 1855) was blessed with good parents, who helped in many ways so that by the age of 14 he was far along in his studies. He surprised people by his mental arithmetic, by his knowledge of ancient and modern languages and by his research work in astronomy. He had an intense admiration for Sir Isaac Newton (1643-1727), and studied his life and reports so intimately that Gauss became a great astronomer himself and also, like Newton, an ardent lover of the Scriptures. Gauss studied the mathematicians, including Euclid (330-280 B.C.), and Descartes (1596-1650), and the astronomers—Copernicus (1473-1543), Tycho Brahe (1546-1601), Stevin (1548-1620), Galileo (1564-1642), Kepler (1571-1630) and Huygens (1629-1695). Gauss came under the patronage and protection of the Duke of Brunswick, receiving an allowance until the death of the Duke. Gauss was able to attend the University of Göttingen.

gen, made such progress in three years, that he was soon given the degree of doctor without an examination. He performed astronomic calculations of the movements of the planets, and by 1807 at the age of 30, he was appointed director of the new observatory and professor of mathematics at Gottingen University, where he remained till his death in 1855, at the age of 78. He was twice married; both wives died early. His youngest daughter kept house for him in his later years.

Wilhelm Weber was born 1804 in Wurtemberg, Germany, 27 years after Gauss, and died in 1890, aged 86. He never married, and was very simple in his habits. A niece kept house for him. He was a man of high character, deep religious convictions, and lived a long useful life. He was the fifth son of a theologian, received an excellent training in his home and graduated in science at Halle University, where he became an assistant professor. In 1831, at age 27, Weber was appointed professor of physics at Gottingen University and was directly associated with Gauss at the University, 1831-37 and 1849-1855. The interval of 12 years was the result of a wrong decision of Weber when he joined six others (Gottingen Seven) in protesting to the King of Hanover when the latter abolished the constitution of the State. The King discharged the seven. Weber was out of work for over five years during the world-wide depression 1837-1843. In 1843 he was appointed a professor at University of Leipzig. In 1849 he returned to Gottingen where he remained the rest of his life till he died 1890, age 86.

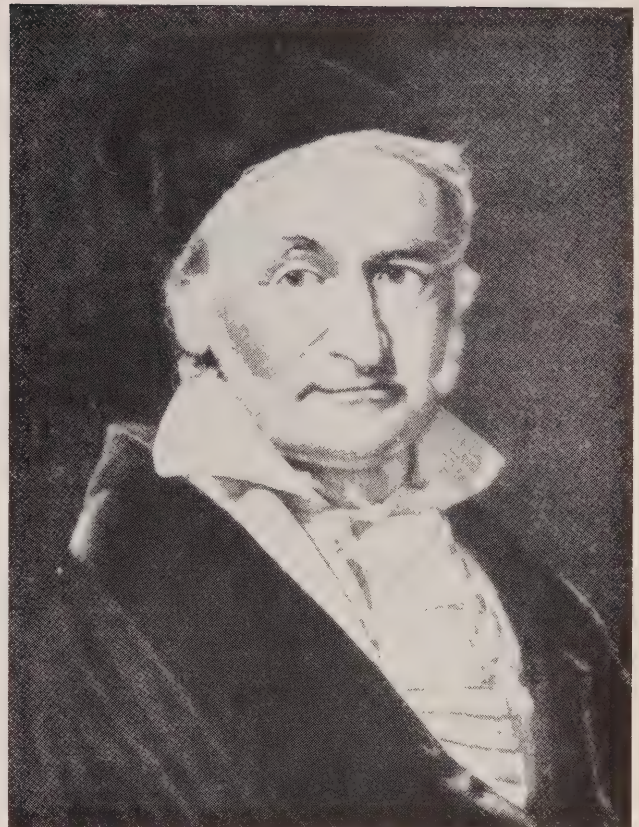
Made Many Basic Discoveries

These two men Gauss and Weber made many basic discoveries in electricity. Gauss became known as the "Prince of Mathematicians" and developed new methods of calculations. His experiments and measurements of the earth's magnetic force stand out as one of his main accomplishments. He originated a system of units of measurement of space, mass and time (centimetre, gram, second). When Weber joined Gauss in 1831, they both continued in developing the system of measurements, Weber on electrical units and Gauss on magnetic units. Their system was adopted at various meetings of scientists beginning in 1861, so that, with amendments or additions, it is the system in use today for measuring electricity and magnetism. They were very happy in their work, and continued their joint researches though separated for a period of 12 years. Weber invented measuring instruments including the earth inductor and the electro-dynamometer.

Gauss and Weber made an electromagnetic telegraph in 1833, the first to operate with two wires. They sent signals by means of the deflection of a magnet operated by an induced current. They also discovered how to send signals on only one wire by using the earth as a return conductor.

In studying the methods of scientists we learn that discoveries come to the person who looks for them, who trains his eyes to really see what he looks at, whose mind is alert to detect the tiniest effects and differences, who searches for something he wants to find and who does not depend on chance or accident.

It often happens that two or more men have stumbled upon the same idea about the same time, causing much



KARL FRIEDRICH GAUSS

trouble later trying to prove who was first. Everyone should use a good system of records and dates for future reference. Many inventors have been terribly disappointed because their ideas have not been recognized or rewarded.

Our next article will describe other scientists and inventors.

R.C.I. PRESIDENT

C. FRANK PUBLOW, transformer station engineer of the electrical engineering department of The Hydro-Electric Power Commission of Ontario was unanimously elected president of the Royal Canadian Institute at the 97th annual meeting held recently in Toronto.

Mr. Publow was born at Pilot Mound, Manitoba, where he received his primary and secondary education. In 1908, he graduated as an electrical engineer from the University of Toronto and a year later he received the degree of Bachelor of Applied Science. He joined the staff of the Commission in 1916.

Other Hydro men who have been accorded this distinguished honour are Wills MacLachlan, head of employee relations, and Dr. Otto Holden, hydraulic engineer.





DAVID ERNEST KENNEDY, energetic chairman of the Guelph Board of Light and Heat Commissioners, was born on August 20, 1883, and was raised and educated in Guelph.

Mr. Kennedy has had considerable experience in municipal affairs, having served on the city council for seven years, as well as having been mayor in 1937 and on the Light and Heat Commission for the past three years.



He never has to worry how he is going to put in the day as he is president of the Northern Woodstock Rubber Company Limited; vice-president of the Homewood Sanatorium; director of the Federal Wire and Cable Company Limited; director and secretary-treasurer of the Windham Plantations Limited; secretary-treasurer of the St. Williams Plantations Limited; and

2nd vice-president of the Ontario Curling Association.

His forebears were also associated with the municipal affairs of the district as both his grandfathers, David Kennedy and Thomas Gowdy, served on the city council, Mr. Gowdy having been mayor in 1889. His father, John Kennedy served on the city council for 20 years and was mayor in 1901-1902.

In spite of Mr. Kennedy's diversified interests he still finds time for curling and golfing.

WILLIAM JOHN BISHOP, quiet spoken and genial secretary and superintendent of the Guelph Board of Light and Heat Commissioners, is a native son of the "Royal City."

Born in 1899, he attended Guelph Public School and Guelph Collegiate Vocational Institute. Mr. Bishop has been associated with the Guelph Board of Commissioners for the past 25 years. His duties have included electrical instruction and maintenance, accounting, and his present position of secretary and superintendent.

When off duty he indulges in his favourite sports of curling and golf.

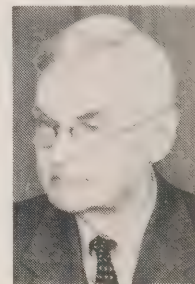
FRANCES MARGARET HEEG, treasurer of the Guelph Board of Light and Heat Commissioners, has been associated with this commission for over thirty years. Miss Heeg joined the staff upon graduation from Loretto Academy to work under her father, the late John J. Heeg, who was manager even before Hydro's inception in this municipality, which position he held until 1941.

An ardent student of English literature, Miss Heeg also takes a keen interest in sports.

PERTH County is noted for its diversified farming and it also happens to be the native county of HUGH J. McHUGH, who was born in 1870, and who is a member of the Guelph Board of Light and Heat Commissioners.

During the twenty-six-years he has been serving on the Guelph Board, Mr. McHugh occupied the chair for eight years. Another chapter in his record of public service was chronicled in 1917 and 1918 when he was elected to the Guelph council.

In his school days, Mr. McHugh turned in some fine performances on both the gridiron and the diamond. He is now going after the "big 'uns" and frequently dons his swimming suit.



JAMES GORDON GOW, who is assistant to the secretary of the Guelph Board of Light and Heat Commissioners, can trace his family connection with that municipality for the last century. His grandfather, James Gow, settled in Guelph in 1851 and served on the city council in 1889 and 1890. His father, James P. Gow served as school trustee for four years and was in business in that town for over twenty-five years.

Mr. Gow was born in 1909 and attended schools in Guelph, where he was identified with many baseball and hockey teams. At the present time, he finds his relaxation in fishing or shooting.

PELZ OF PRESTON

FRED O. PELZ, chairman of Preston Water and Light Commission is a man who has devoted thirty years of his life to community service. In 1916 he was elected to the town council and, since that time, he has served as deputy-reeve and mayor as well as in his present position which he has held for the last nine years.

Mr. Pelz has been a foundry foreman for over forty years and has been a man of "note" in the musical world in that he has played in the town's band for the last twenty-five years. With such a full schedule, he has still found time to be a "tower of strength" in all civic movements.



NOTES FROM THE DANCE



BRINGING TOGETHER employees in all departments, the annual dance sponsored by the Ontario Hydro-Electric Club is a noteworthy social event in the busy lives of Hydro folk. Hydro News "flashed" these impressions of this year's gathering at the Royal York Hotel. Commissioner W. Ross Strike, K.C., and Mrs. Strike (left centre) were present. The quintette (centre) are (bottom to top) Bobby Waites, Florence Paterson, Alice Blackburn, Joan Gilmour and Kit Lennox. Centre right: Mr. and Mrs. Bert Goodhead. Lower right: H. C. Davies, president of the O.H.E. Club. Bottom left: Mr. and Mrs. Roy Taylor, Mr. and Mrs. F. B. Pope, Mr. and Mrs. W. V. Morris and Mr. and Mrs. M. Gahagan.



Hydro

HOME FORUM

by Edithemma Muir

HOME ECONOMIST

LUCKY is the lady who will step to her garden and reap what she has sown. The fresher the vegetables, the higher the vitamins and finer the flavour. You can have too much of some things but not vegetables. Eat any and every kind, but keep the green and yellow to the fore. They are chockfull of vitamins and are no meanies when you realize the amount of minerals in them.

Salads are the easiest way to maintain the goodness of vegetables—and it solves the problem of providing luncheon, dinner or tidbits for your family and the numerous “summer” guests. Tossed shredded greens are usually improved by marinating, which means to toss the diced ingredients lightly with French dressing until every portion is coated. Cooked, diced vegetables are improved by tangy boiled dressing, while the jellied (raw or cooked) vegetables are delicious with the addition of lemon juice. There are endless combinations of the main ingredients and variations of the appropriate salad dressing.

Requested boiled salad dressing ingredients (without vinegar) are as follows: $\frac{1}{2}$ cup of cream, 2 tbsps. fat, 2 tps. cornstarch, $\frac{1}{4}$ cup milk, 1 tsp. sugar, 2 tps. mustard, $\frac{1}{4}$ tsp. salt, f.g. cayenne, $\frac{1}{4}$ cup lemon juice, 2 egg whites. Method: Put the cream and fat in a saucepan and gradually add cornstarch moistened with milk. Cook until starch is clear, add sugar, mustard, salt, cayenne and lemon juice. Mix well, stir in stiffly beaten egg whites and cool.

A few additions: To a cup of salad dressing add choice of $1\frac{1}{2}$ tbsps. onion, $\frac{1}{4}$ cup chopped nuts, $1\frac{1}{2}$ tbsps. green pepper and gherkins, 1 chopped egg,

$\frac{1}{2}$ tsp. curry or 1 tbsp. grated cheese.

Your accompaniments to salads can do as much to add glamour to food in the same way as accessories can enhance one's attire. Too many over-garnished, over-decorated affairs or too much repetition of relishes can spoil your fresh, epicurean salad.

Though properly “dressed”, good salads still need adornment if they are to have the greatest appeal. Provide a perfect setting by framing your salad in lettuce (choice young, green leaves), or use watercress or peppergrass as a base. Then give expression to your love of colour in the selection of your garnishes—a few will do.

GARNISH IDEAS

CHEESE APPLES, PEARS AND CARROTS: With the hands, shape cream cheese into tiny apples, pears and carrots, about two inches. Insert cloves at the blossom and stem ends of apples and pears and give the carrots a parsley top.

CELERY CURLS: Using scissors or a sharp knife, make parallel, lengthwise slits at top and bottom of 4 inch pieces of celery, leaving about $\frac{1}{2}$ inch in the middle uncut. Drop into a bowl of ice water and chill. The slit ends will gradually curl.

HALF-EGG TULIP: Cut the hard-cooked egg in half. Nick the edges in serrated fashion. Devil the yolks for the centre.

WHOLE-EGG TULIP: Cut a thin slice from the broad end of a hard-cooked egg. With a sharp knife, make five or six slits in the white from the top. Gently push back the

white “petals” and remove yolk. Devil the yolk with salad dressing or milk; season and replace in the white.

CELERY MATCHES: Cut large tender stalks of celery in match size pieces. Chill (but not in water). Just before serving, dip one end of each in paprika and salt. Celery match boxes are made by slicing the stalks of celery to within $\frac{1}{2}$ inch of the bottom.

CARROT RING HOLDERS: Choose large carrots. Wash and peel. Cut into 3 inch lengths. Using apple corer, core each piece, then cut into ribbons about $\frac{1}{2}$ inch wide. Chill. Serve filled with green onions, raw turnip straws or watercress.

CARROT CURLS: Use medium sized carrots and have them at room temperature, (or the pieces will break). Wash and peel. Then, using a vegetable peeler or blade of coring knife, slice lengthwise in paper thin slices. Drop slices into bowl of ice water. As the slices stand, they will gradually curl. Drain well before serving.

EGG CHAIN: Cut hard-cooked eggs crosswise in slices. Remove yolk from each slice. Cut a slit in half of the white rings, and link together (a slit one on each side of an unslit one) to form a chain around a salad or meat plate. (The Chain should be formed on the plate.)

RADISH ROSES: Wash radishes and remove all but a few sprigs off the top. Using a sharp knife, make petal-like deep cuts in the radish. Begin at stem end and carefully work to the top. Snip off the root end. Chill in electric refrigerator.

THEY CAME, SAW AND CONQUERED: NOW "SYD" AND "SAM" HAVE GONE

Informal Farewell Dinner Tendered Syed Abdul Quader And Subramania Swayambu—M. J. McHenry Makes Presentations Of Framed Photographs—"Cosy" Cousins In Attendance

By The Editor

"Syd" and "Sam" have left.

When they came to the Commission a year ago they were hailed as Syed Abdul Quader of the Independent State of Hyderabad, and Subramania Swayambu of Calcutta, two of India's outstanding engineers. They had come to Canada to learn something about the administrative and commercial aspects of Hydro in Ontario to better equip themselves for highly important tasks associated with the promotion and extension of hydro-electric service in their own country.

That such impressive and awe-inspiring names should have been abbreviated to "Syd" and "Sam" cannot be attributed altogether to the fact that their Canadian friends found themselves "stumped" at times. What is nearer the truth is that when these young "ambassadors" entered the Commission building in Toronto and the various departments, they also entered the hearts of Hydro folk.

There was ample, sincere and spontaneous evidence of this fact at the informal farewell dinner tendered "the boys" in the Alexandra Palace a few days before their departure. While the event was arranged and conducted by members of the promotion department with whom "Syd" and "Sam" had close day-to-day contacts during their year with Hydro, it also symbolized the high esteem in which they were held by all Commission personnel.

That esteem—affection seems to be a much more appropriate word—found tangible form of expression in the presentation to "Syd" and "Sam" of very fine, framed photographs—the work of J. H. Mackay, the Commission's internationally-known photographer—portraying an unusually arresting study of the administration building on University Avenue.

Marking the climaxing highlight of a friendly event, the presentation was made by M. J. McHenry, director of promotion, after James A. Blay, the assistant director, had proposed a toast to the guests of honour and tribute had been paid by W. A. Ollen-Bittle, the chairman of the evening.

"In order that the spark of memory may be revived occasionally," said Mr. McHenry; "it is my pleasure to

(Continued on next page)



AGAINST A symbolic background—the Union Jack and the flag of India—members of the promotion department, faced the camera following the informal dinner and presentations to Syed Abdul Quader and Subramania Swayambu. Seated (centre) at the top of the table is M. J. McHenry, director of promotion, who made the presentations. On his left is Mr. Quader and on his right, Mr. Swayambu.

J. R. McLINDEN RETIRES: SERVED AT OWEN SOUND

**Association With Local Electrical System Dates
Back About 60 Years—Successor Is Robert
Butter of Hamilton Hydro**

JOSEPH R. McLINDEN, superintendent of the Owen Sound Public Utilities Commission, has retired from active duties because of ill health after having served on the utilities' staff for over 30 years. His successor is ROBERT BUTTER of the Hamilton Hydro-Electric Commission.

Mr. McLinden's association with Owen Sound's electrical system dates back about 60 years, he having worked in 1886 for the Royal Illuminating Lighting and Manufacturing Company, which was the first company to supply lighting to this municipality. His first job at that time was trimming carbons of arc lights in stores, and shortly after this he installed arc lights, 19 of them, for street lighting. Later he was put in charge of the construction of the Inglis Falls dam.

In 1903 the town of Owen Sound took over the Royal Illuminating Lighting Company, and Mr. McLinden was made superintendent. At this time he installed Swedish generators of 500 and 400-horsepower capacity which supplied the town's current until power was purchased from The Hydro-Electric Power Commission of Ontario in 1915. Mr. McLinden retained his position of



superintendent, which post he held until his recent retirement.

He is credited with the development of the city's present power system, and during his years of service he made many friends and won the respect of all with whom he came in contact. He is widely known for his outstanding success in helping under-privileged and crippled children. In this connection he was chairman of Owen Sound's Rotary Club Crippled Children Committee. He was also chairman of the Board of Governors of the General and Marine Hospital at Owen Sound for 17 years.

Back in 1890, "Joe" won a ten mile bicycle race. He also helped to build a 28-foot cruiser which was used for fishing and hunting trips in the North country. In recent years he has become an enthusiastic devotee of the "Royal and Ancient."

ROBERT BUTTER, operating engineer in charge of operations, maintenance and construction at the Hamilton Hydro-Electric Commission has been appointed general manager of the Owen Sound Public Utilities Commission to take over Mr. McLinden's duties.

Mr. Butter was associated with the Hamilton Hydro for over 20 years, having been appointed general electric utility engineer in 1923, and in 1935 he was made operating engineer, which position he held until his recent transfer to Owen Sound.

He is a graduate of the University of Toronto and is a member of the Professional Engineers Association.



CAME, SAW AND CONQUERED

(Continued from previous page)

present to you something you may take back home—something that will recall your association with us.

"I hope," he continued, "your work with the Commission has given you an insight into our operation—that it has given you something really worth while that will help you in any work you may undertake in India in the future. Your problems are not entirely akin to ours here. Yet, when one looks over the situation generally, the problems are basically similar in the final analysis throughout the world. It is the problem of building up the ability of human beings to live together in the most equitable manner."

In proposing the toast, Mr. Blay observed that during the time "Syd" and "Sam" had been with the Commission they had been recognized as "members of the gang." Unquestionably, he remarked, Commission personnel had profited a great deal by the association and he hoped that their guests had profited in turn. "We are going through a serious period," concluded Mr. Blay, "and I think if we can work together, getting to know one another's problems, we can contribute to a better understanding throughout the world."

Syed Abdul Quader made gracious acknowledgment of "the honour you have shown us," and said they had learned a great deal along various lines—not only along

technical lines but about administrative and other matters. Everyone, he said, had been kind and helpful and telling them the things they wanted to know. "I am sure we will profit very much from our stay in Canada," said Mr. Quader. "This association, I am sure, will be remembered for a long, long time."

Similar sentiments were expressed by Subramania Swayambu whose observations, at different points, sparkled with delightful flashes of humour. He had come with high expectations and had been disappointed—he had found human beings, Mr. Swayambu remarked as the small room re-echoed with laughter. He recalled many of his experiences with the Commission, and expressed appreciation for the fine co-operation received from all departments and then made a reference which might be described as the piece de resistance of the evening.

It came when he was recalling how he had looked over the lighting section headed by George Cousins. It looked so "cosy"—in fact he felt like calling Mr. Cousins, "Cosy Cousins."

The laughter and good-humoured observations round the table indicated that Mr. Swayambu, who had been welcomed by the Hydro family as "Sam," had, in turn, left behind a name which will "stick." From now on, the Commission's supervising lighting engineer will be known as "Cosy Cousins." That the latter accepted the nom de plume officially was shown when he autographed the presentation photographs at the close of the event!

#his and #hat

BY THE EDITOR

THERE is some strange magic about the Spring that prompts people to act and react in diverse ways. It is a time of the year when the changing trees and landscape and bird songs seem to "inspire" the most unlikely folk to "try their hand" (and incidentally, "try" their friends) at writing poetry. It is only in the Spring when our butcher has a "sheepish" look in his eyes and when his hair seems to be a little longer. Normally, he is a rugged, sturdy citizen, a good Canadian, a champion of the Magna Carta and the Statute of Westminster and an artist with a meat cleaver.

We expect any day now to be asked to look over his latest contribution to the world of letters. We feel that it will be along these "lines:"

A BUTCHER WITH A "BEEF"

*Poetry's really not my meat,
But I've a story to tell;
I'm a butcher with a "beef,"
For I've got none to sell!*

Spring has also a marked influence upon the ladies. In fact, it seems to go, in varying degrees, to their heads. On Easter Sunday, we accidentally came face-to-face with a platoon of these ladies who were returning from Board Walk manoeuvres. (We decided, at first, that a hat might be regarded as a lady's clowning glory!) It was one of the most colourful and certainly the earliest, flower show we have seen in years. Later in the day we saw other hats that were more to our liking and so we felt it would be unfair to make a carte blanche condemnation of Easter Bonnets. Then a word about the dresses. In February, our fashion adviser expressed "high" expectations

concerning this year's styles. We found that her predictions were reasonably accurate. An Easter Parade does tend to awaken the usually oblivious male to the fact that our Canadian girls possess these "attributes" which endow them with a charm that would assure them a welcome wherever they might go.

* * *

WHILE ON the subject of Spring and poetry, we wish to acknowledge another timely contribution from the pen of G. M. B. Lumgair of the Commission's accounting department. Here it is:

* * *

ALMOST LANDED!

*A man, a pool, the summer time,
A rod, a reel, a silken line,
And where the ripple purrs and smirks,
'Tis there the pirate pickerel lurks!
The demon of the finny clan,
No enemy he fears but man!
A baited hook, a silver flash,
A startled look, a headlong dash,
A bite, a strike, the reel spins fast;
The demon pickerel hooked at last!
So up and down the pool he strives,
Now leaping high, now deeply dives,
'Till on the surface listless floats.
And as his captor greedy gloats:
One last despairing twist, he's gone!
'Tis never lost I wist, till won
The battle that in life we wage—
Youth yielding, oft to wiles of Age!
Now far beyond the river's edge,
Nursing his torment in the sedge
The demon lies—and so dear Youth,
Please play the game, and tell the
Truth!
For fishy stories oft related
Become sometimes exaggerated.*

THOSE WHO were responsible for conducting the recent "Give To Conquer Cancer" campaign are to be commended for having done a very fine job and for having brought out some very "vital" facts with which everyone should be familiar. For instance, it is not enough just to glance at the figures which show that during the five years of war twice as many Canadians died of cancer as were killed in all services. This means that very nearly 80,000 Canadians were taken by this deadly disease during the war period. Last year alone 14,000 people in Canada died of cancer. Of that number—and get this, it's important—6,000 could have been saved if they had had treatment in time. Study these facts.

Dr. George S. Young, chairman of the board of directors of the Canadian Cancer Society and member of the Ontario Commission for the investigation of cancer cures, has warned people to beware of "unorthodox treatment methods." There are only three ways in which cancer can be cured, he says. They are X-rays, radium and surgery. These, however, must be applied in time.

The campaign against cancer did not end with the April drive. Our doctors are doing their part but they need the wholehearted and sustained co-operation of the public. They have the prayers of those who suffer that medical science may conquer cancer—before it is too late—for them.

NO LET-UP IN DEMAND

(Continued from page 20)

proportion to the individual consumer's cost of change-over from 25 to 60 cycles.

This, of course, referred rather to consumers who might have substantial changes to make in motor-driven equipment. In the case of the ordinary domestic consumer, as previously pointed out by Hydro spokesmen, the cost would usually be inconsiderable.

The decision, on a change in frequency, Dr. Hogg intimated, would be made quite soon, as it would affect the Commission's plans for the provision of additional generating capacity. It is understood that, when the opinion of the Commission has been definitely formulated, it will be submitted to the different municipalities concerned for review.

Dr. Hogg drew particular attention to the fact that for more than 30 years this Province had witnessed a progressive decrease in the price of power. Reductions in rates had been almost a yearly event in Hydro history. While the cost of other commodities had gone up, the cost of electricity had gone down, and yet the costs of capital construction to the Commission over the past ten years had risen from 50 to 100 per cent, and were still rising. Everyone seemed to be prepared to pay more for everything except electrical services. The Commission was founded to serve the interests of the people of Ontario by supplying them with power at as low a cost as possible, and it intended to continue to do so, but a stabilization of rates on the present low basis for some time to come might be necessary.

"I am not suggesting," explained Dr. Hogg, "that Ontario must look forward to an era of increased power costs. But I do suggest that, with rising costs everywhere, we should not expect a continuing reduction in electric power rates."



HYDRO'S EXHIBIT of new types of thermoplastic wire was among those shown at the Industrial Accident Prevention Association's Convention at the Royal York Hotel in Toronto on April 8 and 9. E. L. Coomber, (right) of the H.E.P.C. inspection department is seen discussing the wires with two interested delegates.

ROBERT EVANS YOUNG, who was recently appointed distribution engineer for the Etobicoke Township Hydro-Electric Commission, received his public and high school education in Brampton and graduated from the University of Toronto as an electrical engineer in 1938. The same year, he became affiliated with Hydro as an apprentice engineer at Richmond Hill and has held subsequent positions at Markham and Kingston. During the recent war, he was commissioned with the Royal Canadian Corps of Signals and served overseas from November 1941 to June 1944. Mr. Young is married and both he and his wife are ardent tennis and ski fans.



DOWNWORDS PUZZLE

1	2	3	4	5	6	7	8	9	10	11	12
S	T	E	W	A	R	T	V	I	L	L	E
T	O	X	H	P	E	R	A	N	A	I	Q
A	R	P	E	R	L	I	L	C	M	N	U
N	O	E	E	I	A	E	A	P	K	I	
D	N	N	L	L	A	N	D	N	L	B	N
A	T	D	B	F	B	G	I	T	I	E	O
R	O	I	A	O	I	U	C	A	G	A	C
D	N	T	R	O	L	L	T	T	H	R	T
I	I	V	R	L	I	A	O	I	T	E	I
Z	A	R	O	E	T	T	R	O	E	R	A
E	N	E	W	D	Y	E	Y	N	R	S	L

LAST MONTH'S SOLUTION

On the left is shown the solution to last month's Downwords Puzzle. The puzzle for this month is to be found on page 33.

"SPlicing" TIME

(Continued from page 14)

Hydro supervision. During the war years this was not practical because of the manpower shortage and in April of 1942 a cable splicing school was organized and a small group of men were trained.

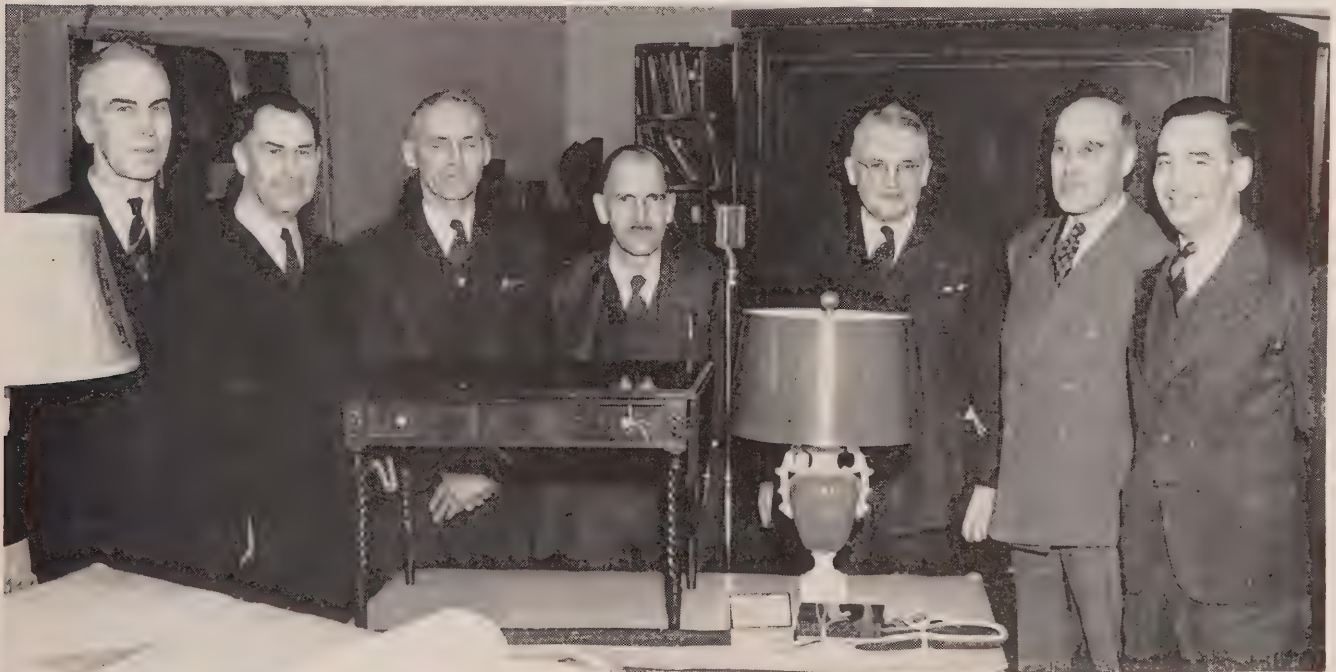
The results of this first school were so successful that last April a second class was organized by C. W. Boardway, of the electrical engineering department. Horace Seager was lent by the Bell Telephone Company, for the second time, to instruct the class and was assisted by H. C. Carrique of the communications group. The course took three weeks and was conducted at the Bloor Street Service Centre. There the men learned the technique of splicing, testing, and repair of communication and control cables.

The trainees were carefully selected from members of the construction and operating departments' field staffs. They were picked for their skill and adaptability, keeping in mind that they will be called upon to give instruction to additional field staff. The presence of these trained men throughout the Commission's various systems will be another valuable cog in the machinery set up for making electrical power available at all times to serve the province of Ontario.



DOWN THE ALLEY

COMPRISING WHAT is believed to be one of the oldest five-pin leagues playing under Canadian Bowlers Association rules, the Ontario Hydro-Electric Club's teams have recently completed their thirtieth season on the alleys. (Top left) Lorraine Gauthier goes into action to spare it up." Top Right: Helen Dixon was snapped just as she delivered a bowl. Lower Left: Two top men, Ed. Kingstone and Harv. Cook, keep the game rolling, while on their right Reg. P. MacKay, past president of the league, presents Mel. Cutt, captain of the winning distribution team, with a cup.



"THERE IS nothing like the present," said A. H. Hull, electrical engineer for the Commission, as he handed out fishing poles, furnishings and fixtures to members of his staff who have completed twenty-five years service with Hydro. The men shown here who become eligible this year for membership in the Quarter Century Club are: A. H. Barber, H. L. Wagner, S. W. Bumstead, E. C. Higgins, their chief, A. H. Hull, already a member, George Henderson and Jess Cornish. R. E. "Bob" Hamilton was absent at the time this picture was taken.

Lighter Lines



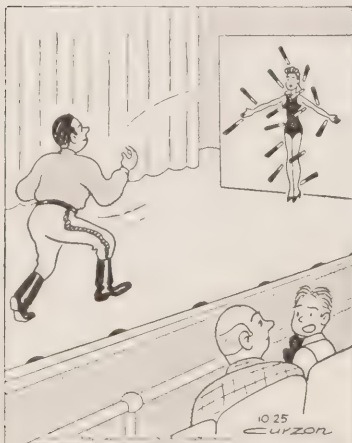
10-22

"Love is funny—I always thought I couldn't fall for a girl, unless she was beautiful!"

The street-car had been delayed by a truck stalled on the tracks, and the operator was trying to make up time. At a stop an elderly lady ambled slowly from the curb to the car.

"Please hurry, madam," urged the operator. "We've got to get along."

"Oh, you men!" sighed the old lady, as she put her ticket in the box, "you're all the same. Why, I've been waiting for you for nearly fifteen minutes."



10-25

"What's so wonderful about his aim? He missed every shot so far!"

It was beautification week. Said Brown to his wife: "It's a pity that the Perkins couldn't be persuaded to do something about that garden of theirs. It's a shame the way they've let it run to seed. It spoils what I might call the ensemble effect of all the back-yards in the district. I think I'll speak to them about it."

"Don't you interfere," warned his good lady. "You're far too outspoken. Leave it to me. I'll handle it diplomatically."

Next morning when Mrs. Perkins was hanging out her washing, Mrs. Brown looked over the fence. Seizing a favourable moment when her neighbour had pinned the last of her husband's prewar shirts to the line, she remarked:

"Do you know, hanging up that old shirt reminds me of the meat shortage. We're thinking of planting more beek-steak tomatoes and kidney beans." She giggled facetiously. "But you won't have to worry, my dear—not with that lovely patch of lamb's quarter and chicken weed spread all over your back lawn."

THE NEW "ALIBI"

Before we take our drivers out
Or take a stance at tee;
Before we slam with erring clout
Or slice into a tree:
Before we dub that iron shot
Or fizzle our approaches;
Before our putting goes to pot
And fills us with reproaches;
Before we play the same old game,
I'd like to be prophetic;
Our "alibi" this year — we'll claim
The balls are too synthetic.

Judging by this year's Easter parade, women can chalk up another victory. In the come-back race between men's shirts and Nylon stockings, Nylons have won in a walk.



10-24

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"Fore, Dear!"

A Kentucky judge met an old Negro mammy of his acquaintance.

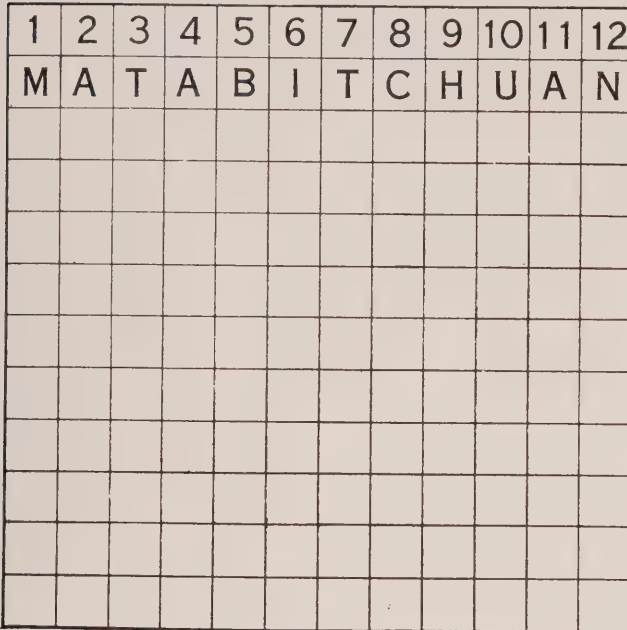
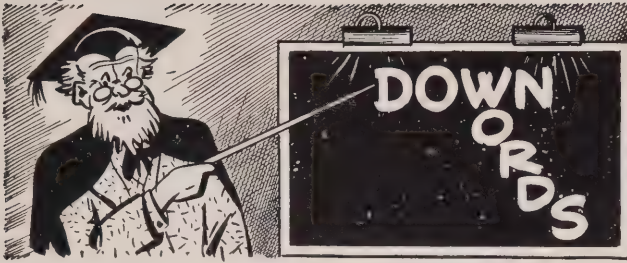
"Good morning, Aunt Jemima," he said, pleasantly. "Where are you going?"

"Laws, Jedge," was her reply. "I've been whah I'se goin'."

A young engineer named O'Giffy,
Just fresh from the shores of the Liffey,
Said "Why not right-about face,
Reverse every tail-race?—
We'd double our power in a jiffy."

WRIGHT
7
NEW YORK

"I've held the chair" of English literature for seventeen years, and I'm nuts about the racket!"



FOR once Professor Perplexus appeared to be in a good humour. "It's May," he observed, quite mildly, "and many of you young Downwords fans will be writing your university examinations this month. So I'm not going to bother you with any very difficult words. In fact, I think this month's Downwords Puzzle is the easiest to solve of any I've got up. We're going up to Matabitchuan, one of the generating stations which Hydro purchased from the Northern Ontario Power Company in 1944. It is a high head development with a capacity of 13,200 horsepower. It'll be a little cool up there still. Better bring your coats."

DEFINITIONS

1. The job at a Hydro power plant once construction is completed and the equipment installed.
2. Canadian Indians.
3. Matabichuan is two miles up-stream from this lake.
4. "Hail, Caesar, read this schedule!" (Shakespeare). Who said this?
5. The Indians used to trade these for powder, guns and flour. (2 words).
6. It depends upon whether you are a cavalier or a round-head whether or not you would call the period in English history between 1649 and 1660 this.
7. A fur company's station or store. (2 words).
8. Once the glory of the ball-room, now supplanted by Hydro lighting (plural).
9. Sung in churches and in oratorios at Easter (old style, pl.)
10. Mirrored reflection of two animals "fighting for the crown." (2 words).
11. Heralded by thunder, these appeared to Macbeth. (Shakespeare).
12. Often grown on the back fence.

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SOUTHERN ONTARIO SYSTEM

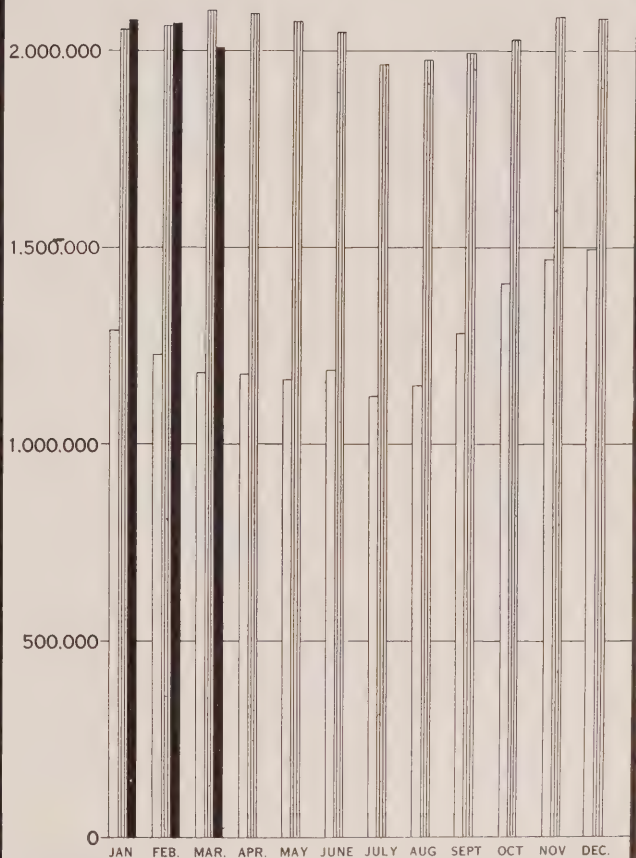
EMBRACING NIAGARA, GEORGIAN BAY AND EASTERN ONTARIO
DIVISIONS

PRIMARY LOAD

HORSEPOWER

2.500.000

Year	Population (millions)
1939	10.0
1945	11.5
1946	12.5



PRIMARY LOADS

AREA SERVED BY	MAXIMUM 20-MINUTE PEAK H P		PER CENT INCREASE
	MARCH, 1946	MARCH, 1945	
SOUTHERN ONTARIO SYSTEM	2,006,473	2,104,580	- 4.7
THUNDER BAY SYSTEM	130,697	120,643	+ 8.3
NORTHERN ONTARIO PROPERTIES	193,844	245,466	- 21.0
TOTAL	2,331,014	2,470,689	- 5.7

PRIMARY AND SECONDARY LOADS

SOUTHERN ONTARIO SYSTEM	2,177.103	2,150.881	+ 1.2
THUNDER BAY SYSTEM	156.568	134.987	+ 16.0
NORTHERN ONTARIO PROPERTIES	<u>265.996</u>	<u>305.104</u>	- 12.8
TOTAL	2,599.667	2,590.972	+ 0.3



HYDRO *Lightens* The Way

● In the operating room, under a shadowless flood of light, surgeons perform miracles with the help of Hydro. Sensitive electric cutting instruments are used in many delicate operations. Elsewhere, it powers the X-ray and therapy machines. It protects nurseries from air-borne germ infection. It conditions the air, runs the elevators, pumps the water. And these are but a few of the many ways in which electricity serves.

Hospitals provide an outstanding example of the benefits derived from 24-hour Hydro service. Indeed, without the ever-present aid of electricity, there could be no modern hospital. With its help . . . surgery and medicine discover new ways and means to fight and control disease and illness . . . industry creates new and better products for the progress and welfare of mankind.

Just as the doctor relies on electricity to aid him in healing the sick, so we, in our everyday life depend on it to assist in performing many of our daily tasks. No matter where we live . . . be it city or farm . . . we can look forward to even better living in the days to come, by planning now to enjoy more of the benefits that electricity can bring.

THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO



HYDRO! *News*

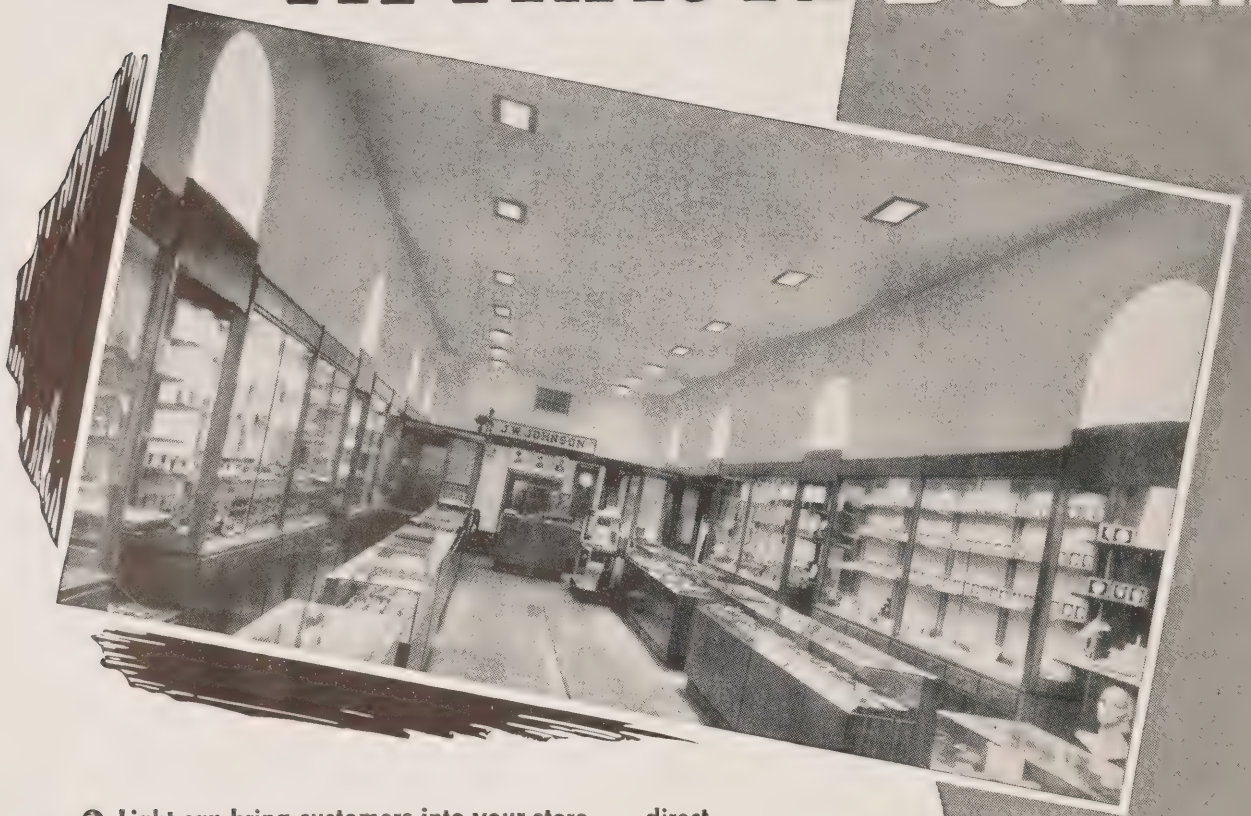
KEEPS ON ROLLING

VOL. 33

JUNE, 1946

NUMBER 6

GOOD LIGHT ATTRACTS BUYERS



● Light can bring customers into your store . . . direct them to any section you desire . . . then help to induce them to buy. This can be done through skillful use of various degrees of brightness on different surfaces. Light up those dull corners . . . spot-light "impulse" items there . . . and light will sell goods for you.

It is not recommended that you "flood" your store with light. Put two or three times as much light on special stock as on regular stock; and light up regular stock two or three times as brightly as the architectural features of the store. Relative brightness sells goods and pays dividends.

Good store lighting with low-cost Hydro is profitable. As a progressive merchant, you cannot afford to ignore good lighting. Yet, to avoid wasteful experiment, you should be guided by trained advisers. Consult a good lighting contractor, or ask your Hydro office.

**THE
HYDRO-ELECTRIC
POWER COMMISSION
OF
ONTARIO**



THE HYDRO - ELECTRIC POWER COMMISSION OF ONTARIO

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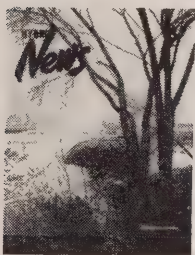
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THE FRONT COVER



"KEEPS ON ROLLING"
is the title of this
month's interesting front
cover reproduction—another
photograph by J. H. Mackay
of the Commission staff.
Taken in close proximity to
Hydro's Toronto Power Plant
on the Niagara River, this
picture shows the overflow
of water from the gathering
basin as it is seen from the
highway about a quarter of
a mile above the falls.

Volume 33

June, 1946

Number 6

CONTENTS

	Page
Stewartville Development - - - - -	2
Page Three - - - - -	3
When Day Is Done - - - - -	4
Saluting Smiths Falls - - - - -	6
Stress Adequate Wiring - - - - -	10
Engineers Are Honoured - - - - -	11
Around The Hydro Circuit - - - - -	12
Table Top Farms - - - - -	13
Calling All Anglers! - - - - -	14
Engineers Playing Essential Role - - - - -	15
Where 4,000 Meals Are Served - - - - -	17
War Plant Now Seat Of Learning - - - - -	17
Cow Moose "Shot" - - - - -	21
Down Through The Years - - - - -	22
New Quarters For Kingston R.O.A. - - - - -	25
Wanton Destruction - - - - -	26
Hydro Home Forum - - - - -	27
Lighter Lines - - - - -	28
This And That - - - - -	29
For The Ladies - - - - -	30
Salvage Old Poles - - - - -	32
Monthly Load Summary - - - - -	35
Municipal Loads - - - - -	36





WELL-MERITED TRIBUTE

EACH succeeding generation in the passing panorama of history includes these men and women who have performed "massive deeds and great" and whose contributions to the progressive march of science and the arts are, all too frequently, unheralded and unsung for one reason or another.

In the light of this fact, it was of more than passing interest and significance, to hear the well-merited tributes paid recently to the members of the engineering profession for their role during the late war when they "had faced engineering problems that had never arisen before."

These tributes were voiced at the recent gathering of engineering societies, reported in this issue of Hydro News. Dr. Thomas H. Hogg, chairman of The Hydro-Electric Power Commission of Ontario, who presided, believed that engineers, while contributing in no mean way to the world's advance in a fast-moving scientific age, had been, to some extent, self-effacing. That might not necessarily be a fault, but if it created a lack of appreciation or knowledge of the position of the engineer in our national life then, he thought, it was a failing.

The Hydro chairman also expressed the view that public utilities were the most important servants of modern civilization and the engineer had been called upon to play a major role in their development and could be justly proud of his handiwork.

These and other facts stressed by Dr. Hogg and other speakers at this gathering are facts which should be known. Canadians have good reason to be proud of the faithful, untiring service rendered by their engineers before and during the late war.

In the momentous days and years ahead, still greater responsibilities face the engineer who will be called upon to apply his skill in the planning and accomplishment of new scientific projects which will be dedicated to the well-being of his fellow men.

QUALITY OF MERCY

IT'S not easy for people who are well-fed, well-shod and well-clothed to know what it really means to be hungry and to go about in clothes which might more accurately be described as rags.

But such are the conditions under which millions of people are existing in Europe today. In their hour of distress, these people are looking to more

fortunate countries for help before it is too late. Their problem is one which completely transcends political and national considerations and, therefore, the giver who would extend aid with one hand in the hope of being able to grasp some material advantage with the other is lacking in these qualities of heart and mind which dignify humanity in its finest and truest form.

Hydro folk, in common with all their fellow Canadians, cannot but be deeply concerned about the tragic plight of these people in Europe. The situation is one which would prompt every individual Commission and municipal Hydro employee to take immediate action to make his or her contribution to Canada's effort to bring succour to Europe.

There are a number of ways in which effective help can be given. This month, for example, Miss Edithemmu Muir in the Hydro Home Forum column, draws attention to what the individual can do in order to make more food available for export. It should be remembered also that a clothing drive will be launched on June 17th and will continue until June 29. During that period, Canadians are asked to make available any clothing they no longer wish to wear. Here are the things most urgently required; suits, overcoats, uniforms, work clothes for men and boys, infants' wear of all types, coats, dresses, aprons and smocks for girls and women, shoes in pairs (tied securely with string), caps, felt hats, knitted headwear, gloves and mitts, woollen socks, underclothing, piece goods, blankets, sheets and remnants. Collection arrangements will be announced by local community committees, but now is the time to get busy.

By their deeds at this time, Canadians can demonstrate that "the quality of mercy is not strained."

HYDRO'S TOURING FARMS

PEOPLE who have an opportunity of seeing one of the four Hydro farm exhibits, which will be on display at fairs in various parts of Ontario this year, will readily appreciate the fundamental importance of adequate wiring on the farm, as in the home or factory, in order that the maximum benefit may be derived from Hydro service.

These educational exhibits, which take the form of table top farms built to scale, are the subject of a special story in this issue of Hydro News. The itineraries are also given so that as many as possible may plan to see one of these interesting displays which show a great deal more than can be expressed in words.

← IF THE reproduction on page 2 were a sound picture, the reader would hear the snorting of steam shovels, the staccato reverberations of pneumatic drills and the roar of rushing trucks as Hydro proceeds with the job of building an 81,000 horsepower development at Stewartville. When the power house structure takes shape it will be 200 feet high and the top will be about level with the bush line in the background.



CHAPTER IV — EARLY LAMPS

By Mildred C. Redmond, *Hydro News*

It was probably not long after fire was discovered that some observant caveman noticed that a small shred of bark lying in some spilled grease and ignited by a spark from the fire, continued to burn for some time, giving a flickering but recognizable flame. He would then, in a spirit of experiment, put some grease in a stone with a hollow top, put an end of bark in it and light the other end from a torch—and so would appear the first lamp of history!

After that someone else would think of hollowing out the stone with a flint to make a deeper reservoir for the grease. Many of these first lamps have been found in various parts of the world and archaeologists believe that some of them may be 30,000 years old. The easiest material for them to work with was sandstone. Slowly the child-like mind of primitive man thought of one small improvement after another for his lamp. First, he made it in a handier shape to hold, then he put a groove in one corner for the wick and sloped the bottom of the lamp towards the wick so the grease would flow towards it, and he put a resting place for the hand away from the flame. One Neolithic lamp that was found has a platform for the thumb in one side of the lamp and a hollow in the underside to receive the fingers. The idea of the lamp was a tremendous step towards progress, it was much more efficient than the torch for it could be set down safely and didn't burn so rapidly.

This hollowed-out stone in its simplest form was the common light source through the whole prehistoric era. It is, in fact, used to this day by those people in the world who have not progressed beyond the stone age. On this continent the Esquimaux are an interesting example. Actually, they are the only aborigines on the American continent known to have had lamps at all. Their lamps have been of the simplest form right from prehistoric times and they have never even got as far as the refinement of a groove for the wick. They are mostly hollowed soapstone and have been highly prized household objects. Often, long journeys have been made to obtain the right kind of stone and no young man would be considered ready to marry unless he could show at least one or more lamps

which would become the dowry of the bride and, in family life, the particular pride and care of the women. Seal, whale or walrus oil are burned in these lamps and moss powdered and laid along the edge serves as a wick.

Usages of The Stone Lamp

Our own ancestors used the stone lamp until they discovered that clay could be moulded and hardened and that metal could be worked into shapes they needed. However, there are a couple of curious late usages of the stone lamp. One was in the medieval monasteries in England. Here cresset lamps that were nothing more nor less than the primitive stone lamps with a wick and oil were used to light the cloisters as long as the monasteries existed. Such lamps were also found in much later times in remote farm houses in Norway and Sweden.

Although the hollowed stone would be the first obvious dish-shaped object that would come to the attention of the caveman, in certain lands bordering water there was another ready-made saucer at hand—the sea shell. And it



THREE EXAMPLES of North American Esquimaux lamps that are comparable to those used by primitive man as far back as 30,000 years ago. Left, is a soapstone lamp, the other two are made of clay.

was the shell that those primitive people living along the eastern side of the Mediterranean used as a lamp for many hundreds of years. Much later when they had learned to shape dishes from clay, the idea of a lamp in shell form was so impressed on their minds that for another thousand years they carefully modelled all their lamps in the shape of shells.

Archaeologists say that, so far as is known, the earliest lamps of this type have been five or six thousand years old, but that they probably date from long before that. They have been found in all those parts of the world where the Carthaginians or Phoenicians settled. The most popular shells for the purpose were the oyster, scallop or whelk groups. A modern descendent of these lamps could be seen as late as last century in the Orkney and Shetland Islands where they were hung from the rafters and used with fish oil; they were called "buckie lamps," "buckie" being the Scots name for the red whelk.

Lamp Festival In 5th Century

One lamp scholar has pointed out that primitive man was much more ingenious than modern authors of fiction; neither Robinson Crusoe nor the Swiss Family Robinson had the bright idea of making lamps from shells.

One of the earliest of the high civilizations that we have been able to study in some detail is the Egyptian. But

among all the wealth of material objects found in the tombs, lamps have been conspicuous by their absence. It seems strange that the mighty Pharaohs with their wealth and magnificence were not much better off after dark than the caveman. Their palaces must have been gloomy enough, for they were lit by shallow saucers filled with castor oil with a burning wick floating on the surface. The chief eye-witness authority for their lighting was Herodotus who wrote in the 5th century B.C. He refers to a festival of lamps he saw at Sais during which the inhabitants burned a multitude of lights in the open air around their houses. They used, he says, flat saucers, filled with a mixture of castor oil and salt and with floating wicks. Plenty of saucer-like dishes have been found in the tombs but of course it is impossible to identify them precisely as lamps for they would have neither a spout nor a blackened edge.

For the wealthy there was an adaptation of this into a more elaborate lighting fixture. In the tomb of Tut-ankh-amen there was found a beautiful, carved alabaster vase with a coloured picture inside which can only be seen when there is light inside so that archaeologists think that it must have been used as a lamp. A saucer lamp was probably set down inside it.

Another variation was a lamp made in the form of a granite or limestone stand about three feet high. It supported a flat bowl with a floating wick. These tall stone

(Continued on page 25)



ONE OF the living rooms in the royal palace of Cnossus in Crete about the year 2,000 B.C. The object in the right background that looks like a modern cigar stand is a tall stone lamp, about three feet high with a bowl on top in which flickers a burning wick floating in olive oil. The Minoans, possibly, borrowed this lamp design from the Egyptians who used similar ones. *(Photograph courtesy of the Royal Ontario Museum).*



INVITING GREEN sward, trees, bushes, attractive rockeries, a water course and rustic bridges are to be found at Hydro Park at Smiths Falls, shown above, a popular rendezvous with the local citizens.

By W. Ronald Mathieson, Hydro News

About the year 1874, a gentleman named Major Thomas Smythe, received a gratuity of 400 acres of land for "remaining loyal to the Crown during the American Revolution." That land, comprising lots one and two, County of Leeds, District of Johnstown, is now the location of Smiths Falls, Ontario.

Known to-day as "The Gateway to the Rideau Lakes," this town became a member of the Hydro family in 1917 when a load of 500 horsepower served the needs of approximately 1,000 consumers. Since that time, the load has increased to 3,500 horsepower and the records of the local Hydro Commission show that there are now 2,033 domestic, 268 commercial and 38 industrial users.

The statistically minded manager of the Smiths Falls Commission, Norman J. Douglas, also advised Hydro News that there are 21 miles of local transmission lines.

Among the larger industrial users of power are Frost and Wood Company Limited, who make farm implements, The Canadian Pacific Railway, Smiths Falls Malleable Castings, Justus Electric and the Superior Silk Mills Limited.

The present commission comprises; F. A. Wale, chairman; mayor G. S. Robb and E. V. Dyke, commissioners.

Hydro News also learned that in 1917 when J. F. Montgomery, George B. Frost and W. S. Murphy were on the town council, the first bond issue of \$135,000 was authorized to form the Smiths Falls Hydro-Electric Commission. This money was used to buy the Smiths Falls

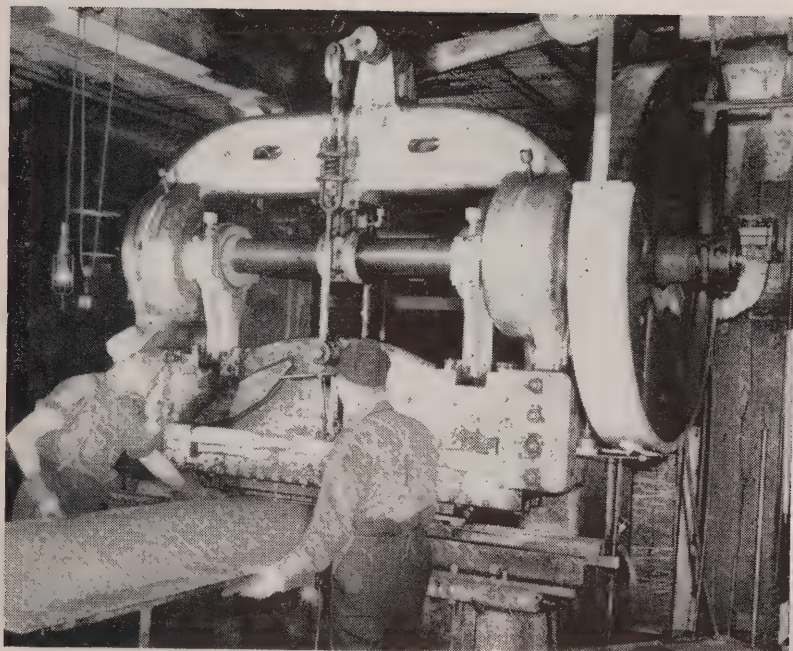
Electric Company and the Citizens' Electric Power Company.

In going over the historical records, Hydro News found that 120 years ago, the land which is now the site of the town was purchased by a man named Abel Russell Ward, a lumberman, for £600. Prior to that, Major Smythe, the original owner, had mortgaged it to Joseph Sewell of Boston for £237. Fourteen years later, the land was sold at a public auction in Elizabethtown, now Brockville, for £105 to Charles Jones who became a member of parliament. It was Jones, who, in turn, sold the land to Ward.

The same year that the latter was getting his mill into operation and building his log cabin home, the Rideau Canal construction began. This waterway, which connected chains of lakes, was paid for by the British Government and was intended to be used for military purposes. When completed, it provided a continuous water route between Kingston and Ottawa, a distance of 127 miles and contained 47 locks. Passing through Wards land, it made this area accessible for homesteaders.

In July of 1827, one of the surveyors working on the canal, James Simpson, was so impressed with Ward's progress that he bought two-thirds of the property for £1,500. This partnership flourished and together they built a grist-mill, started a blacksmith shop and opened a general store. Thus, the nucleus of a village was established.

(Continued on page 8)



THAT SHEET of metal will be fashioned into a binder table on a machine that will soon be working in the fields of France. The welder (right) is working on a hinge bar for a mower.



CLARENCE PATERSON, a teacher in one of the Smiths Falls Public Schools, is shown here with his class in a well-illuminated classroom.

J. P. SMITH who looks after Hydro Park in Smiths Falls, knows how to select charming companions, as this picture shows.





KATHLEEN M. CODE (left) was camera shy but she did not seem to mind when Hydro News turned the camera on her while she was making out monthly Hydro bills. The Hydro crew (above) comprising Bill G. Lane, foreman, Gord C. McNeely, Ernest G. Bigelow, Clayton A. Jewett and Clarence L. Labelle were having their noon hour siesta as this picture was taken.



GEORGE PHILLIPS Jr., who is right hand man at Smiths Falls Hydro-Electric Commission, gets that dreamy look in his eyes as he gets the feel of a one-piece casting rod that Harry Shane, a local fishing authority, shows him.

lished, and the land was sub-divided and a townsite was laid out. About this time the name Smythe's Falls became Smiths Falls.

The next few years saw a great change in this locale. Lots were bought up, industry was started and trade was established with Ottawa and other centres. After 1840 the boom lost momentum but by 1854, the settlement had received sufficient recognition to be granted a charter as an incorporated village.

Railroads Arrive

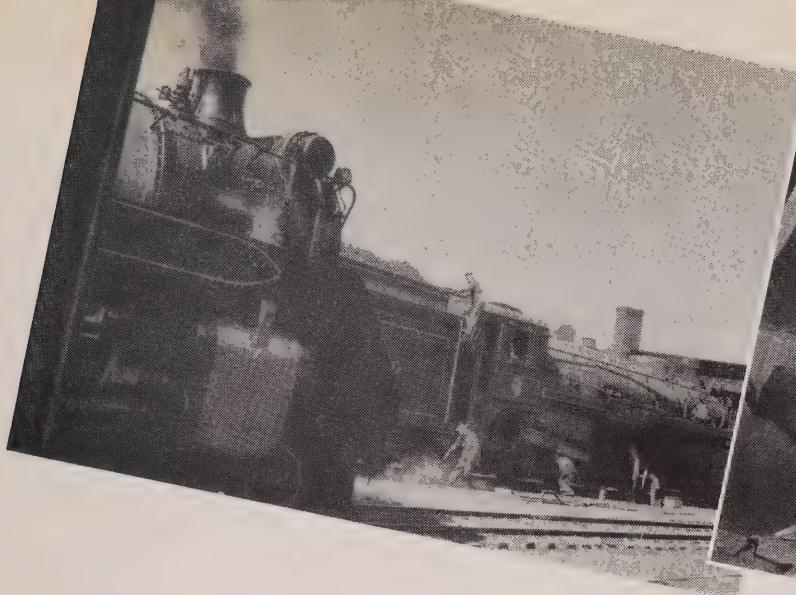
Celebration festivities were still fresh in the minds of the inhabitants when a railway was built connecting Perth and Smiths Falls to Brockville. The era of Canadian rail expansion had begun and Smiths Falls was blue-printed as the eastern hub. In 1884, two years after it had officially become a town, the main line connecting Montreal with Toronto and Ottawa was built, and the tracks converged at Smiths Falls which was the geographic switching point.

To-day, it is the largest divisional point on the Canadian Pacific Railway system, with accommodation for servicing 32 locomotives at one time in the massive round-house. There are 35 miles of tracks in the yard and, it is reported almost 3,000 cars pass this terminal every twenty-four hours. The main line of the Canadian National Railway also goes through the town

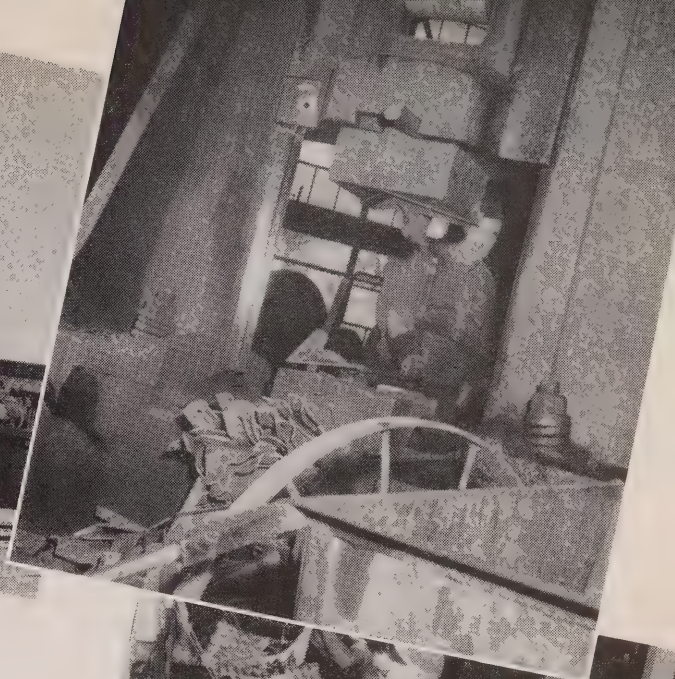
Versatile Newspaper

A. E. Dobie, editor of the Record News, Smiths Falls' only paper, told Hydro News that the first journal to be published in that town made its appearance in 1858 under the name of the Rideau Gleaner. This was followed by the Smiths Falls Review which was established in 1863 and ran for five years. This in turn was succeeded by the Smythe's Falls Times, established in 1874.

Other newspapers were founded but the only one to survive was the Rideau Record, established in 1887 by



LIKE AIRCRAFT, the big locomotives also get a periodic check up before going out on a run. Hydro News was on hand as a crew were servicing this latest type of engine shown above.



TOP RIGHT: This fellow isn't exactly turning the sword into a ploughshare but he is making seeder drills on the same machine that was turning out covers for mills bombs just a year ago.

CENTRE RIGHT: The lassies here are sewing lingerie on the latest type of electrically-operated, shaft-driven sewing machines.

BOTTOM RIGHT: At the Bell Telephone office, Hydro News found Mary Bradford adjusting the frequency on a line that is carrying a radio broadcast from New York to Canada. All these relayed programmes pass through Smiths Falls.



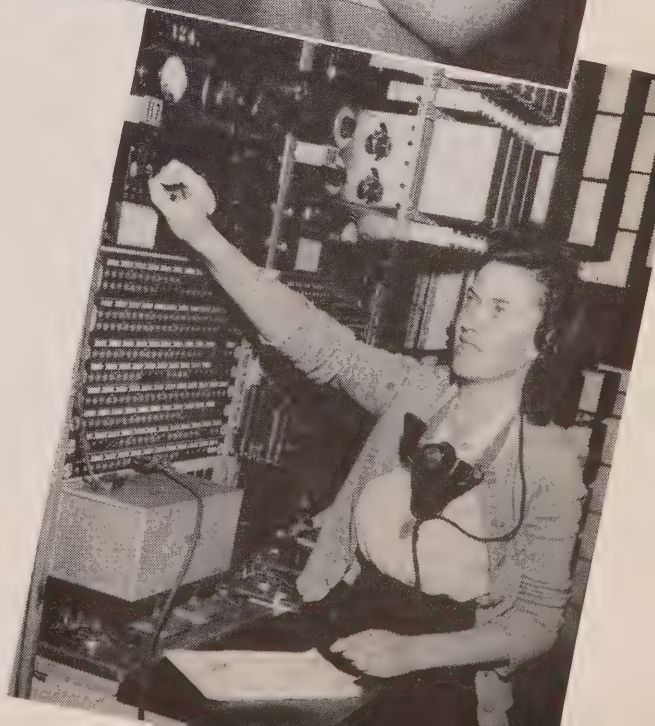
the late G. F. McKimm. That paper is known to-day as the Record News which is edited by Mr. Dobie who showed Hydro News type characters of five foreign languages with which the paper is equipped for special jobs that are done for exporting firms.

Smiths Falls possesses, along with its Hydro-Electric Commission, modern waterworks and a filtration plant and, it is interesting to note, all debentures against Hydro were paid off in 1942. Rather than count the street lights, Hydro News accepted the figure of 401 which Mr. Douglas provided. This is considered to be above average for the area that the town covers.

Every recreational advantage is provided by the Municipally-owned Canadian Pacific Recreation Grounds, which is a 13-acre beauty spot, having both hardball and softball diamonds, tennis courts, a bowling green, a football field and cinder track.

There are several other recreational and scenic parks in the town. Down by the transformer station, Hydro has its own park, complete with rustic bridges and well-maintained rockeries.

There are excellent fishing and hunting grounds at the very edges of the town and this year, the local Chamber of Commerce is putting on a special drive to encourage Canadian and American tourists to visit and see the beauty of Lanark County.



IMPORTANCE OF ADEQUATE WIRING IS STRESSED BY HYDRO SPEAKERS

"There is not enough attention being paid to adequate wiring," emphatically stated M. J. McHenry, director of promotion, during the "Hydro Hour" at the annual conference of the Ontario Association of Radio and Appliance Dealers at the Royal York Hotel on April 30.

"It might be said to be the fundamental arterial system of any home," he continued, "and every consumer should be made to understand this." He pointed out that it was simply wasted effort to sell appliances without proper wiring, and urged complete co-operation between the manufacturers, the dealers and the electric power distributors, to attain the common goal, that is to have all consumers use a maximum of electrical energy. He spoke of the fine work that the Electric Service League in Toronto was doing in this connection with a well-organized programme of education for the public in the matter of adequate wiring.

He said that the desire for electrical equipment had already been created in the minds of the public and that now it was up to the various organizations to match this with information about wiring.

Mr. McHenry explained that owing to the shortages of materials and to the fact that the power load had not been reduced as had been expected, Hydro has still not been able to get into its full post-war stride. He men-

tioned however that already there are four additional generating plants under way. He emphasized the fact that with large scale building plans ahead, now was the strategic time to stress the idea of adequate wiring in an educational plan.

J. A. Blay, assistant director of promotion, discussed Hydro's Five Year Rural Electrification Plan. He said that Ontario farmers had made an outstanding contribution to the war effort but that now, in the face of the acute food shortage in the world, their increased food production had to be maintained at the highest possible level.

He described briefly Hydro's plan to bring electrical energy to rural populations. It involved, he said, the construction of approximately 7,300 miles of distribution line with service equipment to supply 58,000 new customers including 32,000 farmers. Interpreted in terms of saturation this meant that, at the end of the five-year period, 85 percent of all possible farm consumers in the province would have electricity at their disposal. He stated that in spite of shortages of materials good progress had already been made. At the end of October, 1944, the Commission was serving a total number of 146,633 rural consumers made up of 84,935 non-farm and hamlet customers and 61,698 farm consumers and during the last fiscal year ending October, 1945, more than 13,000 rural customers were added.



M. J. McHENRY (left circle) and J. A. BLAY (right circle) director of promotion and assistant director of promotion respectively of The Hydro-Electric Power Commission of Ontario, were caught in action by the Hydro News' photographer as they addressed the annual conference of the Ontario Association of Radio and Appliance Dealers during the "Hydro Hour."

ENGINEERS ARE HONoured FOR NOTEWORTHY SERVICE

Two engineers, W. P. Dobson, Hydro's director of research, and Maurice Aykroyd, the Bell Telephone's outside plant engineer, have been specially honoured for distinguished service to the profession.

Each was presented with a silver tray as a recognition by their colleagues at the dinner meeting of the engineering societies at the Royal York Hotel, Toronto, on May 10.

In making the presentations, Dr. George B. Langford, vice-president of the Association of Professional Engineers of Ontario, gave a brief summary of the records of the two engineers. Their careers, he suggested, offered evidence of the wide field of usefulness to which engineering science could contribute.

Associated with The Hydro-Electric Power Commission for more than 30 years, Mr. Dobson graduated in electrical engineering from the University of Toronto in 1911. Awarded a research fellowship by the engineering alumni, he returned to the university the following year and received his Master of Applied Science degree in 1914, the subject upon which his thesis was written entailing an investigation of transient conditions on transmission systems. This had included a study of Ontario Hydro in its early development and had provided a natural transition to

employment with the Commission, where his duties in recent years had been almost exclusively devoted to research and standardization. Through his work in research he has retained close associations with his alma mater and at the present time represents the Association of Professional Engineers of Ontario on the Senate of the University of Toronto. Mr. Dobson, Dr. Langford recalled, was the first chairman of the Canadian Council of Professional Engineers and Scientists and was now chairman of the Standards Committee of the American Institute of Electrical Engineers. He is a past-president of the Dominion Council of Professional Engineers and of the Ontario Association of Professional Engineers. He is also a former vice-president of the A.I.E.E.

Mr. Aykroyd, Dr. Langford noted, was a graduate of Queens University, where he received his B.Sc. degree. During the first world war he had been assistant engineer of the Department of Public Works, Ottawa, and later assistant inspector in the Ministry of Munitions (Imperial) at Montreal. From 1919 to 1923, he had been a manager and director of the Export and Import Company of Montreal, New York and London, and in 1923 he joined the Chief Engineer's staff of the Bell Telephone Company of Canada. Outstanding ability backed by a varied experience had led to his present appointment as outside plant engineer of the Company's western area, with headquarters in Toronto, Mr. Aykroyd, Dr. Langford added, was a present vice-president of the Dominion Council of Professional Engineers.



"CONGRATULATIONS ON the valuable services you two gentlemen have rendered to the engineering profession."—This salute comes from Dr. George B. Langford, vice-president of the Association of Professional Engineers of Ontario, as he presents silver trays to W. P. Dobson, director of research for The Hydro-Electric Power Commission of Ontario, (receiving)—and to Maurice Aykroyd, outside plant engineer of The Bell Telephone Company of Canada at the dinner of engineering societies held at the Royal York Hotel in Toronto.



CANADIAN CHAIRMAN AT SMITHS FALLS

FREDERICK ADAIR WALE, chairman of Smiths Falls Hydro-Electric Power Commission, now serving his fifth year with that organization, is a "son of the old sod" who received his education in Dublin, Ireland. Mr. Wale leads an active community life, having been chairman of the Navy League of Canada from 1940 to 1944, and for the last two years he has been a member of the Civilian Committee for the Air Cadet League of Canada. He has served also on the board of directors of the Smiths Falls Public Hospital. Mr. Wale has a neat little workshop where he turns out some fine woodwork on a lathe, and he also has built up a "ham" radio station.

COMMISSIONER ERNEST V. DYKE

ERNEST V. DYKE, who was born and educated at Abbington Berks, England, where he built up a reputation as a sculler and a cricket player, was chairman of Smiths Falls Hydro-Electric Commission for three years and is at present serving his third term as Commissioner. Mr. Dyke sat on the town council for two years, and was chairman of the relief committee from 1938 to 1940. He has had extensive affiliations with the Canadian Legion, having been commander of Zone No. 25 and a past president of the local branch. For the last eight years, Mr. Dyke has been secretary of the Suburban Roads Commission and at present, is chairman of the Citizens' Rehabilitation Committee. During World War One, he saw service overseas and, during the last war, was a commander of the R.C.A.F. Cadets. With all these outside ties, he still seems to find time to look after a very attractive garden.

SMITHS FALLS' MAYOR

MAYOR GEORGE S. ROBB, a Commissioner of the Smiths Falls Hydro-Electric Commission, was born and educated at Toledo, Ontario, and was chairman of finance for the town from 1941 to 1944 at which time, he was elected to the position of chief magistrate. An ardent church worker and gardener, Mr. Robb takes advantage of the local fishing and hunting grounds whenever he can get away from his civic duties and his insurance business.



PAPER TO BE READ AT PARIS



A. H. FRAMPTON (left), assistant-head of the Electrical Engineering Department, H.E.P.C., and **H. J. MUEHLEMAN**, head of the Operating Department H.E.P.C., whose joint paper on "A Review of Transmission Developments in the Systems of The Hydro-Electric Power Commission of Ontario" will be presented at the International Conference on Large Electric High-Tension Systems to be held in Paris, France, June 27 to July 6. This will be the first session of the Conference since 1939, and it is expected that an interesting and informative review will be given of recent developments in long-distance, high-voltage transmission of electricity. Owing to the important programmes upon which Hydro is engaged this summer, it will be impossible for Mr. Frampton and Mr. Muehleman to attend the conference in person. Their paper will be read in both English and French, and translations will be made in other languages.

NORMAN JOHN DOUGLAS

Genial **NORMAN JOHN DOUGLAS**, whose grandparents were pioneer settlers in Montague Township and in the Rideau Ferry District, has served as meter reader, secretary and is, at present, manager of the Smiths Falls Hydro-Electric Commission. A native of Smiths Falls, and he has seen service in the last two wars. The first time he served from 1917 to 1919 in France and Belgium, and the second time he went over as a Company Commander in the Lanark and Renfrew Scottish Regiment. The same zeal that he has shown in his military career was manifest in his "cleaning up" in all the local track and field meets while he was still at school. At present, Mr. Douglas goes in for the not-too-strenuous activities of fishing and golf.

TABLE TOP HYDRO FARMS TO BE SHOWN AT FAIRS



Here is one of the four model exhibits developed by Hydro to illustrate the benefits that result from a well-planned wiring installation on the farm.

In the foreground is a table top farm, which has been built to a scale of $\frac{1}{4}$ inch to 1 foot. It is accurate in all details as to exterior layout, from the Hydro poles with their glass insulators to animals in the barnyard. Among other things, it includes a tidy, up-to-date farm house with lawn, trees and a garage, a barn and silo, a pump house, work shop, piggery, chicken house and implement shed, neatly-ploughed fields and a realistic-looking orchard.

The miniature farm exhibit is designed to show how the outside wiring should be installed to provide satisfactory electric service. This is demonstrated by means of the built-to-scale pole lines, which bring Hydro from the highway and a transformer that distributes the power to the entire farm to operate equipment and appliances and to light the house and farm buildings, the garage and barnyard. So much for the exterior wiring.

Next, on a centre background panel, which is made up of two sections, is shown a proper interior wiring diagram from meter and breaker. A glance at this panel shows the distribution of the circuits to the various farm and home appliances which are portrayed in the form of photographs.

To the right is another panel on which are wire

samples, meter and breaker, main distribution panel and various wiring devices for use in the farm home and farm buildings.

In the background to the left is another panel on which are shown an inadequately wired circuit and two circuits that are adequately wired. This visual demonstration clearly shows what happens when the wiring is not adequate for a voltmeter registers the drop in voltage when three appliances draw their load from one circuit.

One of the exhibits was shown in the Ontario Agricultural College during Farmer's Week from June 10 to 15 and now, these models will be on display in various Ontario towns at the fall fairs. One of the models will become a permanent exhibit at the O.A.C., Guelph, and another at the Kemptville Agricultural School upon completion of the tour.

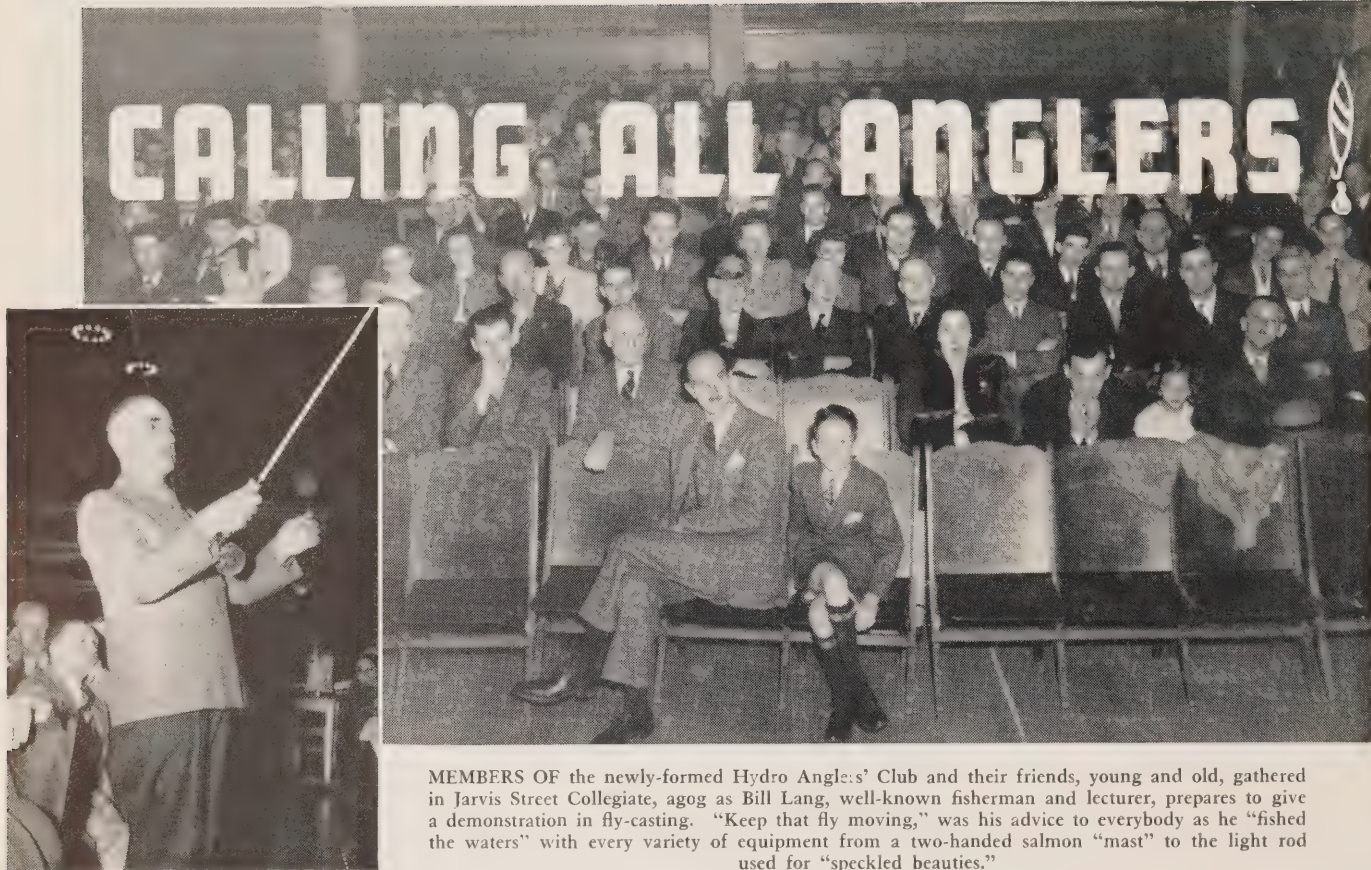
The following itineraries have been prepared:

1—Renfrew—Sept. 10, 11, 12, 13; Belleville—Sept. 23, 24, 25; Aylmer—Sept. 30, Oct. 1, 2, 3.

2—Lindsay—Sept. 11, 12, 13, 14; Caledonia—Oct. 3, 4, 5; Simcoe—Oct. 6, 7, 8, 9, 10; Rockton—Oct. 12, 13, 14;

3—Strathroy—Sept. 9, 10, 11; Leamington—Sept. 16, 17, 18, 19, 20, 21; Welland—Sept. 12, 13, 14; Teeswater—Oct. 1, 2.

4—Ridgetown—Aug. 27, 28, 29; Paisley—Sept. 16, 17; Kincardine—Sept. 19, 20; Owen Sound—Sept. 28, 29, 30, Oct. 1.



MEMBERS OF the newly-formed Hydro Anglers' Club and their friends, young and old, gathered in Jarvis Street Collegiate, agog as Bill Lang, well-known fisherman and lecturer, prepares to give a demonstration in fly-casting. "Keep that fly moving," was his advice to everybody as he "fished the waters" with every variety of equipment from a two-handed salmon "mast" to the light rod used for "speckled beauties."

Demonstrations of fly casting by Bill Lang, fisherman, lecturer and wild life conservationist, and an exhibition of archery by Hydro's Arnold Wytenbach, Canadian champion, featured the entertaining programme given by the Ontario Hydro-Electric Anglers' Club at its first open meeting in Jarvis Street Collegiate, Toronto, on May 2. In addition, Mr. Lang showed several movies in natural colour, picturing "from hatchery to frying-pan" the life history of the more adventurous denizens of Quebec and Ontario waters. A. H. Sharpe, president of the Hydro Anglers' Club presided.

New Anglers Welcomed

Dr. C. H. D. Clarke of the research division of the Ontario Department of Lands and Forests, who introduced Mr. Lang, also welcomed the new group of anglers and spoke of the influence they would undoubtedly exercise in the promotion of true sportsmanship throughout the province.

After showing the picture "Maskinonge in Ontario," and pointing out the many localities within a few hours journey of towns and cities where these big fellows may still be encountered "if you know how to look for them," Mr. Lang turned his attention to the rods stacked in a corner of the auditorium. Picking up a rod almost as long as a Hydro pole, and requiring both hands for its manipulation, he showed how to "fish the waters" in quest of the big salmon found in the rivers of Newfoundland, Labrador and the maritime provinces. Then, selecting

lighter and shorter rods, he revealed the art and finesse of fly casting for the smaller but equally delectable trout which are found in such abundance in Northern streams. Illustrations were also given of bait casting for bass and pickerel.

Hydro's Champion Archer

In introducing Arnold Wytenbach, M. J. McHenry, the Commission's director of promotion, referred to the progress that archery was making in Canada and the United States. Actually this pastime was making a fair bid to become one of the main attractions in the field of sports. It was nice, but not altogether surprising, he said, to know that the champion archer of Canada was to be found in the hydraulic department of Hydro. The Commission had always encouraged clean, healthy sports among its employees.

Shooting as casually as Locksley in the memorable scene in Scott's "Ivanhoe," Mr. Wytenbach rimmed the bull's eye of the target set up on the stage with a couple of sighting arrows and then buried four shafts in rapid succession in its golden heart. He was using a bow of Osage Orange with a linen string. While not indigenous to Canada the Osage Orange has been planted here and there throughout the province of Ontario in hedges and wind-breaks. Wood about 80 years old may be found in the Palermo district, and is an excellent substitute for the yew which has to be imported from Oregon.

(More pictures on page 20)

SEE ENGINEERS PLAYING ESSENTIAL ROLE IN NATIONAL AND WORLD REHABILITATION

Clear Thinking Of Realistic Type Required In Finding Rational Solution To Post-War Problems Says Dr. Thomas H. Hogg At Gathering Of Engineering Societies

That engineers were destined to play an increasingly important role in the post-war world was the message of speakers at a dinner of engineering societies held in the Royal York Hotel Toronto, on May 10. In many programmes of reconstruction and rehabilitation, it was pointed out, the mantle of leadership was by right theirs to wear, and they should aim at a fuller public recognition of this by broadening their contacts and acquiring a knowledge of the human needs and problems of the times.

Standing four-square for consideration of the engineer's work as an essential factor in national and world rehabilitation were the Hon. C. D. Howe, minister of Reconstruction and Supply in the Dominion Government, and Dr. Thomas H. Hogg, chairman of The Hydro-Electric Power Commission of Ontario; while Dr. C. R. Young, dean of the Faculty of Applied Science and Engineering at the University of Toronto and Dr. G. Ross Lord, president of the Association of Professional Engineers of Ontario,

(Continued on next page)

Well Qualified To Advise On Many Problems Declares Hon. C. D. Howe In Urging Engineers To Take More Important Part In Public Affairs

Leaders in the engineering profession, through their training and experience, are well qualified to advise on many problems of reconstruction which confront the world today, and they should endeavour to play a more important part in public affairs.

This was the opinion voiced by Hon. C. D. Howe, minister of Reconstruction and Supply in the Dominion cabinet, at the dinner of engineering societies in Toronto on May 10. At home among his professional colleagues—he was, he said, delighted to come, and had not hesitated a second in accepting the chairman's invitation—Mr. Howe was in an informal mood, and flashes of quite unofficial whimsicality and humour enlivened and embellished his address.

Governments, Mr. Howe suggested, were a bit overloaded with members of the legal fraternity. It was time for a few more engineers to break into this lawyers'

(Continued on page 21)



DISCUSSING MODERN trends in scientific education are Dr. Thomas H. Hogg (left), chairman of the H.E.P.C., and Dr. C. R. Young, dean of Applied Science and Engineering, University of Toronto, during the recent dinner of engineering societies. (Inset, left) Hon. C. D. Howe, Dominion minister of Reconstruction and Supply, addresses the gathering, while (inset, right) Dr. G. Ross Lord, president of the Association of Professional Engineers of Ontario, has a few words to say about the Association's objectives.

CLEAR THINKING REQUIRED

(Continued from page 15)

showed what had been done and what was being done to improve the status of the profession.

As chairman at the dinner, Dr. Hogg had some preliminary remarks to make before proceeding with his own address on "The Engineer's Responsibility in Public Utilities."

"As a group," he said, "engineers, while contributing in no mean way to our world's advance in this fast-moving scientific age, and giving their services in their own communities and nations, have been to some extent self-effacing. While, to a degree, this may not necessarily be a fault, if it helps to create or perpetuate in the public mind a sense of lack of appreciation or knowledge of the engineer's position in our national life and progress, it does become a failing."

Must Keep Well-Posted

Dr. Hogg went on to say that, during the late war, engineers both at home and afield had faced engineering problems such as had never arisen before. These problems had been solved under stress and strain, and the engineer, with this record behind him, should have no fear of tackling the problems of reconstruction ahead of him with courage and decision. The terrific expansions in productive capacity built up during World War II, and capped by the world-shaking events in the discovery of the fission of the atom, the challenge to insularism in the form of the United Nations Organization, and the general world labour unrest—all these presaged new values, and it was the engineer's prime function to keep well-posted in the broadest possible sense in order that they might be efficiently and equitably integrated into the social structure of the world today.

The dinner and meeting of that evening, Dr. Hogg told his audience, had been arranged principally for the purpose of reminding professional engineers that much work was being done by leaders and members of the various engineering societies in order that their profession might be given a more effective position in a national sense—not from a narrow, selfish or purely nationalistic standpoint, but in keeping with the engineers' constant struggle for greater national efficiency. The engineer worthy of a place in the profession must always keep before his mind the questions: "What can I give humanity?—What of enduring value can I get back for myself?"

In the opinion of the speaker, if a rational solution were to be found to post-war reconstruction and rehabilitation problems, it was going to require clear thinking of a realistic type. And he did not know any body of men better qualified to fill this specification than engineers with their scientific training.

Dr. Hogg's audience comprised a representative cross-section of engineers and scientists from the fields of teaching, research and industry in different parts of the Dominion. After remarking upon this, he proceeded:

"Our efforts must be properly and effectively co-ordinated with labour, industry and finance if we are to obtain the results desired. We should begin first to put our own house in order. We must develop a philosophy which will bring team-play and co-operation among all engineering and scientific bodies with the one object of securing the greatest contribution possible from all groups."

Canadian Engineers Rate High

Stressing the fact that Canadian engineers and scientists had pitted their skill and courage against those of all other nations in the world and had been able to hold their place in the very front ranks, Dr. Hogg warned against the development of a post-war inferiority complex

(Continued on page 20)



THESE ENGINEERS are getting quite a kick out of Hon. C. D. Howe's explanations as to why he left the homely office of a construction engineer for the more glamorous rostrum of the politician. The Minister of Reconstruction and Supply was in fine fettle as he addressed his former colleagues at the recent dinner of Engineering Societies in Toronto.

WHERE 4,000 MEALS ARE SERVED DAILY

EDITHEMMA MUIR, the *Hydro Home Economist*, accompanied Mildred C. Redmond of *Hydro News*, on a recent visit to the University of Toronto's division at Ajax. Miss Muir recorded, in this article, her impressions of the all-important role of electricity in catering to the students at this colony of learning.

—THE EDITOR.

Electricity is contributing in a very important way to the comfort, welfare and happiness of the 1,500 students now at the University of Toronto's division at Ajax. Time and motion study of cafeteria management—and Mrs. V. P. Ignatieff, the dietitian manager, is an authority on the subject—combined with the arrangement of time and labour-saving electrical equipment, assure efficiency and speed in providing 4,000 nutritive meals a day to the students.

Imagine serving 1,150 hearty breakfasts in 25 minutes! This is how it is done. The men fall in step as they leave the dormitory and, at the sound of the gong, they break step and stride for one of three lines of the U-shaped serving centres in the large dining room. On their tray they usually select chilled fruit juice, warm cereal. Behind the scenes the electric grills cook about 300 dozen eggs to the best texture for good nutrition. At the serving tables the three electric toasters turn out golden brown toast at the rate of 1,080 slices within 25 minutes.

Preparations For Lunch

With breakfast over, preparations begin immediately for lunch. At this meal there is a choice of salad or hot plate, otherwise there are no alternatives (but the food is so tasty that the students are a contented family). Meat which has been prepared in the butcher shop in roasting pieces is delivered to the kitchens where it is cooked tender and juicy in electric cookers. Vegetables roll down a chute from ventilated store rooms. They are scraped in the electric peeler if they are starchy ones otherwise greens and such are put through three tubs filled with running water. After they are inspected and drained of wash-water, vegetables are placed in steam-cooker pans and wheeled to the electric refrigerator where they are kept at 40° until the minute the pans are put into large steam heated kettles. Cooked to the minute at low pressure, vegetables are either whipped in a huge electric beater or put into the serving crocks which are pushed through a steam heated warmer in the wall. When the servers begin, the food is put in a controlled heat-table and replenished from the *dain maire* as the chef cooks up more for the continuous line of lunchers.

Meanwhile, in the salad kitchen the plates of cool, crisp or marinated ingredients are attractively arranged on trays of plates which are stored in the shelved electric refrigerators until they are taken to the salad counter just as lunch is announced.

Desserts are prepared in another section entirely. Com-

(Continued on page 25)

SITE OF WAR INDUSTRY NOW SEAT OF LEARNING

By Mildred C. Redmond, *Hydro News*

Freshness of outlook and a general spirit of enthusiasm pervade the new Ajax Engineering Division of the University of Toronto. Outside it has all the appearance of a raw, frontier settlement; inside it looks like a cross between a superior institution of learning and a high class men's club.

It was a real feat to have turned a sprawling war plant into a smooth-running, well-equipped overflow from the University. Unprecedented enrolment of student engineers made it imperative that extra space be found, so, after examining possibilities, the University leased one section of the Defence Industries Ltd., an area embracing 428 acres with 111 buildings covering 700,000 square feet of floor space. Reconstruction was hurried through and the first group of first year students entered last January. They work, eat, sleep and play in the various buildings scattered over the grounds. Of the 1,386 students now registered, 1,129 live in residence, that is in former industrial dormitories that now provide comfortable and attractive living quarters. They are assigned two to a room and have additional accommodation for study. Each residence can accommodate about 80 students and is supervised by a housemaster.

To get away from the feeling of a camp there is a policy of using university terminology and everyone is careful to refer to the "campus," the "residences," "University Avenue" and so on.

Hydro is particularly interested in Ajax because from the ranks of these budding engineers will come men who may later find scope for the application of their technical skill in contributing to the continued progress of Hydro and in maintaining the fine traditions of service associated with Ontario's public ownership enterprise. At the same time, Hydro's role in the training of these students is reflected in the fact that the load runs from 800 to 1,200 horsepower at Ajax where very fine electrical equipment has been installed in the reconverted buildings.

Good Lighting

Good lighting skilfully combined with plenty of fresh paint and polished hardwood floors gives an effect of brightness and airiness, and the entire place shines like a well-kept ocean liner. That includes the 2 miles of covered passages connecting the various buildings which imply that a good deal of foot work is done by both students and staff! There is a story (strictly uncorroborated) that the students started bicycling through these vast stretches of corridor until one unlucky cyclist came into violent contact with one of the professors. However, for the really long stretch between the living quarters and the class rooms and offices there is a regular bus service.

The predominant colour scheme is pale green and buff and in each room the lighting has been arranged with regard to the greatest suitability and efficiency. There are 23 lecture rooms each fitted with amphitheatre seats and rows of incandescent lights arranged so that each row can be controlled by a separate switch and the light arranged



according to need. There is a specially designed row of lights directly over the blackboard that gives visibility without glare. There are 13 draughting rooms and 10 laboratories. Over each of the 750 draughting tables there is a strong fluorescent light. The labs have both incandescent and fluorescent lights depending on the type of work being done; the balance rooms where particularly good light is needed are long and narrow and have a row of fluorescent lights down the centre of the ceiling. Another place that the students of the home campus might look upon with envy is the library, an unpretentious room but with adequate facilities and with fine fluorescent lights over each table.

Many Conveniences

As well as lighting for work there is also particularly attractive lighting in the recreational rooms. Hart House Ajax is as much a barracks on the outside as any of the other buildings, but inside it is as impressively modern as any place in this part of the country. The public rooms have clever colour schemes and have been designed with an eye to comfort as well as functionalism. There is a snack bar, games room, reading room, a tiny chapel with fine wood work and lights set in the ceiling and a music room that is really handsome with its subtle colours and lighting. A sunken rectangle let into the ceiling has fluorescent lights behind glass and around the walls are indirect incandescent lights.

There are all sorts of conveniences at Ajax to make life run smoothly, from a shoe repair to a well-stocked book shop. The Engineering Society of the University has a small shop for draughting supplies, the University of Toronto Press has a branch book shop and also operates a printing press. The University Health Service is operating a 24-bed hospital. There are good recreational facilities for basketball, bowling, quarters for wrestling, boxing, tumbling and fencing. There is a tuck shop, a barber shop, a cleaning and pressing shop and a laundry that can take care of 10,000 pieces a day.

The inner man has been nobly cared for too, in a cafe-



TOP: Here is one of the bright, airy lecture rooms at the Ajax Engineering Division of the University of Toronto. Equipped with amphitheatre seats and good lighting, each room has been arranged with a view to efficiency and suitability.



CENTRE: This is a general view of some of the buildings in a section of the grounds at Ajax where over 1,100 students are now in residence. The area embraces 428 acres. Buildings cover 700,000 square feet of floor space.

BOTTOM: An impression of the lighting which is to be found in the thirteen draughting rooms and ten laboratories at Ajax can be formed from this reproduction. Over each of the 750 draughting tables there is a strong fluorescent light.

teria which seats 700 and is conveniently designed with three counter lines. The kitchens are the last word in that sort of thing. Among the pieces of equipment that catch the eye is an ingenious electric vegetable peeler, the vegetables go in at the top and come out into cold running water, clean and ready to cook.

The students admit that their every need has been anticipated and taken care of with one notable exception—woman shortage. But even here the kindly authorities have put their minds to the problem with the gratifying result, one is told, that on Saturdays bus loads of young women mysteriously appear for an evening of dancing.

Ajax students will in no way suffer academically, for their course of work is neither shortened nor condensed. If anything they are the gainers, for they have the finest of equipment, the classes are organized in numbers that are practical for teaching and there is a more personal contact between the students and the staff. And, of course, there are considerably fewer distractions from the studious life. Eighty per cent of this class are veterans and many have had active fighting experience so that the country air and quiet and the wholesome food are for many what they most need.

Already plans have been made to admit the second year to Ajax and it is expected that they may number 1,400 or 1,500 students, while the freshman class entering at the same time may be equally numerous. This means that there may be upwards of 2,800 at Ajax in the next regular session which will start in the fall. Ajax is, of course, closely co-ordinated with the Faculty of Applied Science and Engineering on the home campus.

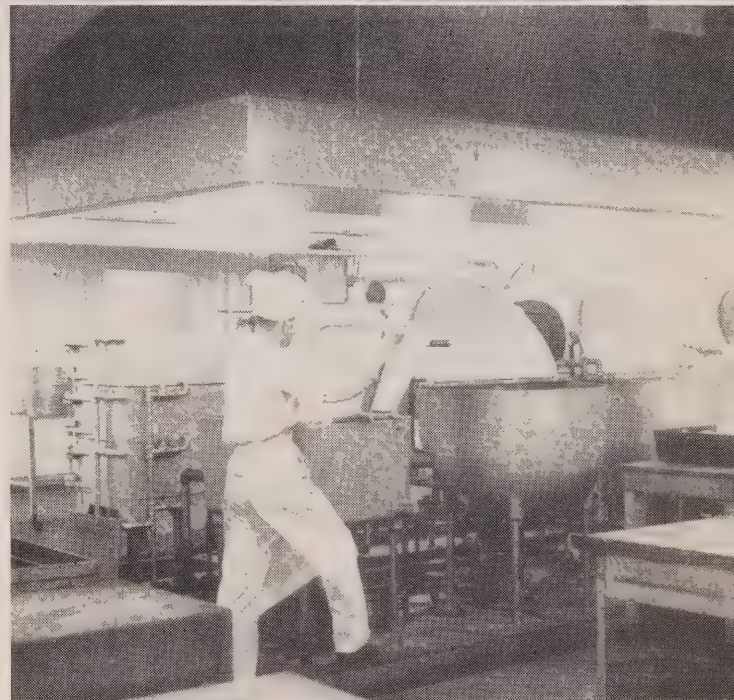
The Faculty Council, through the Dean, administers the academic work and is represented at Ajax by Professor W. J. T. Wright, Director of Studies. Administration of non-academic activities is under the direction of J. Roy Gilley, Director of the Ajax Division.

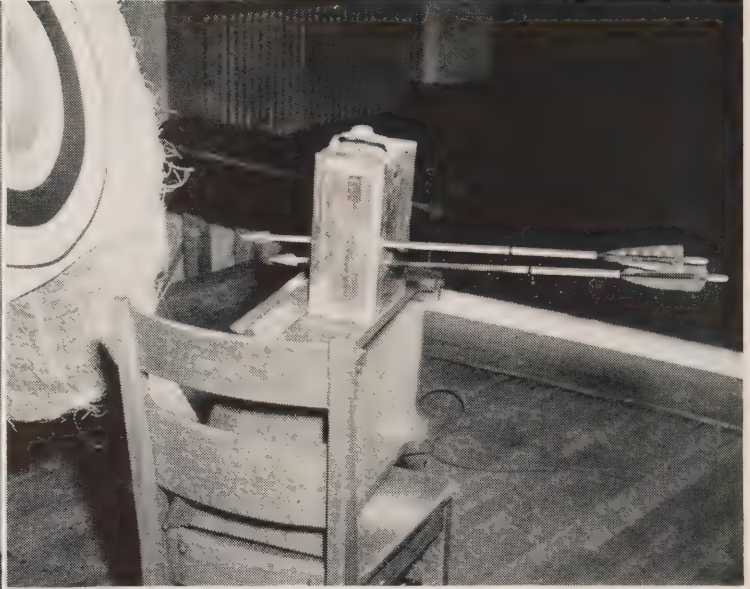
And so the site of a once great war industry has become a seat of learning from which will emerge young Canadians equipped to make their contribution to the future destiny of Canada and the world.

TOP: Not only has good lighting been provided for work in the lecture rooms, but the recreational rooms at Ajax are equipped with particularly attractive illumination. All these rooms are designed for comfort and have fine colour schemes.

CENTRE: There are many stirring times in the modern, electrically-equipped kitchen at Ajax where 1,150 hearty breakfasts are served in 25 minutes. This illustration shows a section of the kitchen which is well-lighted and ventilated.

BOTTOM: Students at Ajax require no coaxing to rally to the well-equipped dining hall at meal times when nutritive and appetizing food is served. This shot shows the boys in action.





ARMED WITH a forty-pound bow of Osage Orange wood, Arnold Wyttenbach, of the hydraulic department of the H.E.P.C., gives a sample of the kind of shooting that won him the Canadian Archery Championship. At the right is shown the target whose golden heart was filled with Mr. Wyttenbach's unerring shafts—while, in front, two hunting arrows have penetrated a box packed with sand.

CLEAR THINKING REQUIRED

(Continued from page 16)

that might be fostered from a consideration of numbers. True, Canada had nothing like the population of its neighbour to the south, and, therefore, nothing like the number engaged in the engineering vocation. But let Canadian engineers stand up to the record in achievements they had made. That was all that was required of them.

Public Utilities Out In Front

Getting into the subject he had announced for his address, Dr. Hogg said he thought that one might truthfully say that public utilities were the most important servants of our modern civilization. How could people get along in our urban, suburban and rural districts today without the facilities that were supplied through our public utilities such as water, gas, sewage, electric light and power, telephone, etc. The more we became mechanized, the greater the dependence we were required to place on public utilities. The engineer had been called upon to play a major role in their development and could be justly proud of his handiwork to date.

"The money invested and the service rendered per capita by the public utilities of Canada and the United States are greater," Dr. Hogg pointed out, "than in any other country in the world, and this fact alone can be taken as some measure of the engineer's responsibility to the public at large."

Speaking as chairman of The Hydro-Electric Power Commission of Ontario, Dr. Hogg drew attention to the fact that the Commission employed one of the largest staffs of engineers in Canada and probably carried on a more diversified class of engineering than any other single industry. Within the past year, as the result of considerable study and comparison, the original method of classification

of engineering salaries in vogue by the Commission had been modified and brought more into conformity with accepted up-to-date practices. As a result, he felt that the salary schedule at H.E.P.C. was at the present time on a fair, just and equitable basis.

Course For Young Engineers

Based on the principle that it would be wise to establish a method of broad training for recent graduates in engineering who were selected to enter its staff, the Commission had, the speaker noted, established a course for junior engineers. This had taken in some 40 recent graduates in engineering. Sixty per cent of the number were ex-service men. It was hoped that through this course, which would last two years, the young engineer would have a rounded experience in the Commission's activities, while those in administrative charge would have an opportunity of discovering where the young engineer's capabilities could be employed to the greatest value for himself and the Commission.

The Commission had made every endeavour, Dr. Hogg added, to give preference to ex-service personnel in the matter of employment. It had actually employed up to date 1277 returned men in addition to the many who had been previously employed by the Commission.

In conclusion, Dr. Hogg inferred that one slogan might well actuate the engineer, the scientist and the institutions of technical education. That was: "Team-play—Co-operation."

Dr. Ross Lord, president of the Association of Professional Engineers of Ontario, had a sheaf of good tidings

(Continued on page 35)

ENGINEERS WELL QUALIFIED

(Continued from page 15)

preserve. There must, he felt, be something lacking in a solicitor's or barrister's training for public affairs which a good engineer could supply.

"Since 1935," said Mr. Howe, with a smile of reminiscence, "I have held six ministries under the Crown, and I have found each one just another engineering job."

On one occasion, the speaker recalled, when he was in London and they were discussing the air training plan at 10 Downing Street, a question of costs had arisen. Everyone was preparing for an hour or more of abstruse calculations, when he had suddenly bethought him of his slide-rule. That, of course, he pronounced, amid laughter, had solved the problem in a few moments.

Explaining his defection from the ranks of practising engineers and his assumption of public office, Mr. Howe said that when he left the field in 1935, it had looked as if all the big work in engineering in Canada had been finished, and, naturally, he was becoming rather bored. Then the war had come along, and it looked as if the engineers had vanished from the earth. They had even had to place a lawyer at the head of one of the engineering sections in the government. Of course, the big exodus of engineers had been to the battle-field, and he had expected, when the war was over there would be at least a fair supply of them around again. As a matter of fact, the task of reconstruction was so immense, that it was as difficult in many tasks to find engineers today as it had been at any time during the war. Since the end of the war in Europe the government had transferred 1,000,000 men from the armed services, but now they were running into a man-power shortage as well as into a shortage of skilled personnel.

Expansion Of Industry

"Not only," said Mr. Howe, "is all our war-plant capacity filled, but we are experiencing an expansion of industry greater than in any year of the war. It is a great problem to find the materials to keep this expanding industry in being."

Although Canada was making more steel today than at any time during the war years, delivery was nearly 12 months behind. And nearly all metals were in short supply. Lead had become almost a precious metal so great was the demand. (It was on account of this shortage of material and labour, stressed by Mr. Howe, that Dr. Hogg, chairman of The Hydro-Electric Power Commission of Ontario, on numerous occasions, had asked for a little patience on the part of the public in connection with the construction programmes to which Hydro is committed.)

During the war, Mr. Howe continued, Canada had shared in the development of atomic energy and looked forward to taking a full share in the conversion of this nuclear force to peace-time use. The development of a greater number of physicists was, of course, a requisite.

In conclusion, Mr. Howe pointed out that Canadian universities had been turning out only about two-thirds as many engineer graduates as in the pre-war period, while the tasks which fell to the lot of their profession were greatly increased.

COW MOOSE "SHOT" BY HYDRO ENGINEER

Standing motionless by her calves, the big cow moose had watched the launch approach. She had scarcely stirred as Frank Grosvener of the Commission's Hydraulic Department took the first photographs. Now, as the "Lollypop" drifted close to shore, she began to nuzzle her offspring excitedly. She was urging them to flight. But they were not yet strong enough on their legs to attempt a get-away, and suddenly the mother turned on the intruders.



PREPARED FOR some real offensive action if a landing were attempted, this cow moose on the English river successfully stood off a party of Hydro men from Ear Falls and prevented them from getting a better "close-up" of the two calves. Under the Marquis of Queensberry rules, which prevail in the closed season, the cow, with her razor-sharp hooves, would have had much the better of any encounter.

The launch was so close that its occupants could see the ears flatten back as the moose pawed savagely at the soft sod of the beaver meadow. From the spruces near at hand came the raucous chatter of a whisky-jack. Roy MacDonald started the engine in reverse. The fore-feet of an adult moose are shod with horn, razor-sharp, and they pack a wallop like a pile-driver.

It was Sunday, May 12. Along with William Dowds, district superintendent of the Patricia district for the H.E.P.C., and Roy MacDonald, first operator at Ear Falls, Frank Grosvener, who is an engineer with the hydraulic department in Toronto, was making a trip on the English River, and he had brought his camera with him.

They were about two miles out from Ear Falls, when rounding a bend in the river, they came upon the family group resting in the beaver meadow.

"I didn't think I'd be able to get close enough for a good picture," Frank told Hydro News in recounting his experience. "I imagine the mother had but recently given birth to the two calves, and that they were unable to move any distance. Anyway, they let us get almost up to them before things began to happen. We were only a few yards away when the mother confronted us. And did she mean business! I had thought about getting another shot from a little different angle on shore but when I saw the sods flying under her feet, I knew she was working herself up for a charge and I decided that discretion was the better part of valour."

DOWN THROUGH THE YEARS

ELECTRICAL HISTORY PART IV.

By Herbert C. Powell

In last month's third instalment of the History of Electricity, we had a peek into the lives of five electrical pioneers of Europe—Oersted, Ampere, Ohm, Gauss, and Weber. In this fourth part we shall learn something about Henry, Morse, Wheatstone, who were among the first to develop the electric telegraph. The telegraph needed electric batteries, hence a short story of batteries introduces the story of the telegraph.

It was a great event in scientific achievement when Alessandra Volta (1745-1827 Italy) announced to the world in 1800 his discovery of chemical electricity and his invention of an electric cell (battery). This device, (which became known as the voltaic cell), is a combination of two metallic conductors immersed in a liquid, all contained in a glass cell. The two metals are known as electrodes, one called the positive pole (cathode) where the current flows out; the other is the negative pole (anode) where the current flows in. It is a direct current, always flowing in one direction. The liquid is known as the electrolyte.

In Volta's battery he used a zinc anode, a copper cathode, and dilute acetic acid electrolyte. A current of electricity was made to flow by the action of the acid on the zinc, so that the zinc dissolves in the liquid, the current flows to the copper, depositing hydrogen bubbles on the copper, but the copper does not change in size or form. The zinc must be replaced from time to time. One trouble developed. That is, hydrogen bubbles deposited on the copper and interfered with the flow of electricity. The remedy for the trouble was another chemical within a porous cup surrounding the copper cathode which had the effect of stopping the hydrogen bubbles. The remedy chemical was called the depolarizer.

Daniell's Cell Introduced

Before 1836 the electrical experimenters used many voltaic cells as their source of electricity. But a new cell was introduced in 1836 known as Daniell's cell, (sulphate of copper constant battery). It has a zinc anode in dilute sulphuric acid; but the copper plate cathode was located within a porous pot and immersed in a solution of copper sulphate which acted as a depolarizer to prevent formation of hydrogen bubbles on the copper. This permitted a constant flow of electricity.

The Gravity cell or Crowfoot battery was an improvement over the Daniell cell for it had no porous cup, but used two liquids; the lighter liquid called zinc sulphate floated above the heavier liquid copper sulphate. The electric current came out through a copper plate at the bottom. It maintained a continuous current in a closed

circuit and was used extensively for telegraph transmission.

Many other cells were introduced after 1836, but it took 32 years to 1868 before LeClanche invented a more practical battery known as LeClanche cell consisting of a glass jar, a solution of sal ammoniac, a positive cathode of carbon, a negative anode of zinc, a depolarizer of manganese dioxide around the carbon and held in by a porous cup.

All of these cells were known as wet batteries or primary batteries.

In 1860 Plante invented a secondary battery (storage battery), but very little progress was made in this line until in 1880, when in France, Camille Faure invented a method of forming the secondary battery plates. In the meantime the electric generator had been invented by which to charge the storage batteries.

Dry Cell Introduced

In 1888 Dr. Gassner produced the first successful Dry cell, consisting of a zinc anode in the form of a zinc can (to contain all of the other materials), a carbon cathode, the zinc chloride electrolyte, manganese dioxide as a depolarizer, a certain amount of liquid in paste form. In 1890 the manufacture of dry cells commenced in Cleveland by the National Carbon Company.

In 1888 the manufacture of the chloride accumulator storage battery began in New Jersey by the Electric Storage Battery Company, and the same company brought out an improvement called the Exide battery in 1900.

When any new idea comes forward, there is a rush of competitors, and this happened in the battery business.

Systems of signalling have been used since human beings first came to live on this earth. Even today the white man cannot understand how certain messages are transmitted so quickly from village to village among the various tribes in Africa.

The electric telegraph business of today has progressed a long way since 1844, just 102 years ago, when the first telegraph line in America began operating from Baltimore to Washington, and 1846, just 100 years ago, when the first telegraph line in Canada went into operation from Toronto to Hamilton. They both used electric cells of the Daniell type as the source of electric energy.

Joseph Henry

Joseph Henry is our first personality to study now. He lived 1799 to 1878, born in Albany, New York. At the age of 26, he was appointed professor of mathematics at Albany Academy, then six years later professor of physics at Princeton University. Fourteen years later in 1846, he became the first secretary of the Smithsonian Institution in Washington, District of Columbia. In 1852 he became a member of the United States Lighthouse Board, and was chairman from 1871 until his death in

1878. He was president of the National Academy of Sciences from 1858 to 1878. He developed the electromagnet in 1831, and the principle of the telegraph relay a few years later. He invented, made and improved many mechanisms and materials for lighthouses, fog, signals, electric and magnetic apparatus, and carried on many varieties of research. He brought kerosene into use as a light source, a cheap kerosene burner, so that by 1861, the kerosene (coal oil) lamp was used in almost every home in progressive communities.

Henry's work in the discovery of induction and the properties of the electromagnet was done in 1830 and 1831, about the time that Michael Faraday had discovered the same things. Faraday's published report did not reach the United States until 1832, and Henry was greatly surprised that Faraday's discoveries were the same as his own. So Henry published his own findings and very unselfishly gave Faraday the credit for the discovery of induction. Henry continued his researches of insulating wire and winding it in the form of electromagnets for many purposes, including lifting weights of 1,000 pounds. He studied induction in parallel conductors by separating farther and farther until the two conductors were 220 feet apart, the wave energy travelling through air, wood, brick, and other structures. He erected a vertical wire from a tin roof to the ground, and obtained in that wire the induced current from a lightning storm eight miles away. Many of his ideas and discoveries were used later by Morse in his telegraph system. Henry's discoveries in electric waves are used today in radio and wireless.

Henry Invented Many Devices

Joseph Henry was among the first in the United States who might have taken out patents, but he refused to do this from his great sense of duty as the result of a religious principle in his family that worldly profit is wicked. He invented many practical devices such as the

telegraph, the electric motor, etc., but left them to be developed by others, as he had no objections to others obtaining patents.

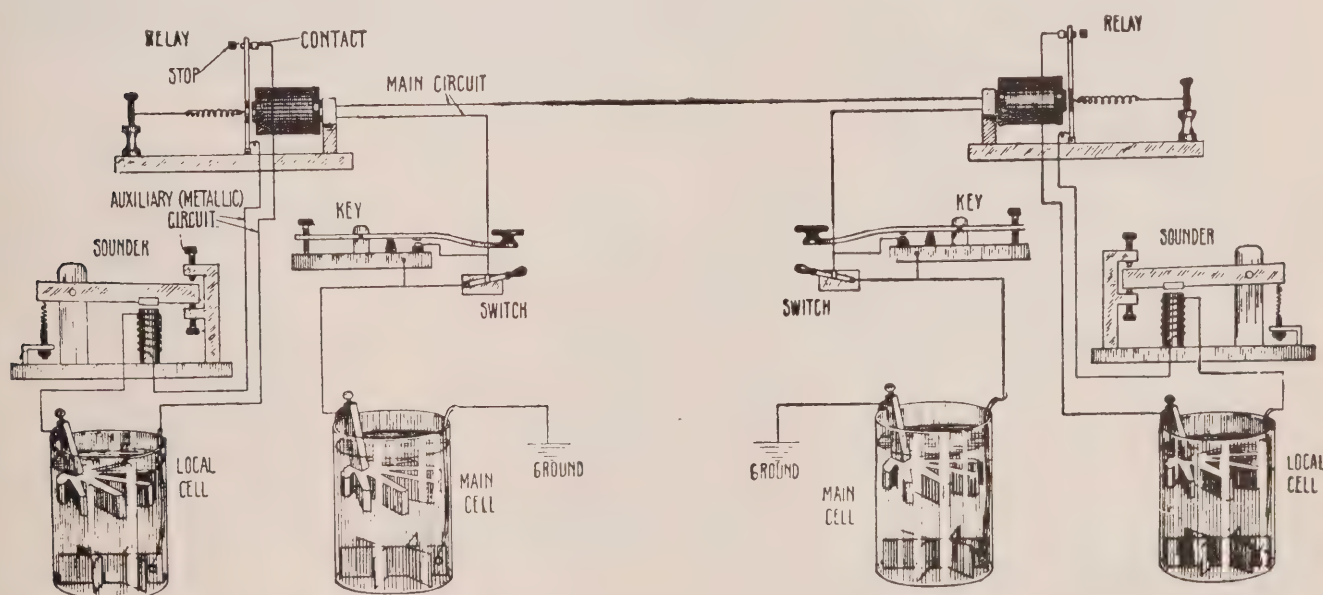
Joseph Henry had a wonderful mother. Her influence is shown in his many good qualities; his love for the Scriptures; his devotion to spiritual duties; his high standard of conduct; his complete unselfishness; he gave others credit even for things he discovered himself; and his life of service in many public and scientific activities. In legal disputes with Samuel Morse about priority of invention of the telegraph, Morse was allowed to have full use of Henry's ideas and inventions. Henry had many friends, but not one known enemy.

The boyhood days of Henry were very happy in reading about great men and their achievements; in observing varieties of things and processes all around him; in making and improving devices that would help mankind.

Samuel F. B. Morse

Samuel F. B. Morse (1791 to 1872) had four careers in one: artist, promotor of inventions, man of business, and politician. In the United States, his system of electric telegraph began operation on May 24, 1844, from Baltimore to Washington, with the message in Morse code, "What hath God wrought." It was on the ship "Sully" in 1832 when returning from England that he devised a system of electric telegraphing by means of the electromagnet and a code of dots and dashes. He used some of the ideas discovered by Joseph Henry as proposed by Morse's partner, Professor Leonard Gale. The public demonstration of his system was made September 2, 1837 at New York University. Alfred Vail became a third partner, and a fourth partner, F. O. J. Smith, was added later. Morse and Smith were unsuccessful in obtaining patents and orders in Europe.

Morse graduated from Yale University at age 19. He



WHEN THE Morse code was first clicked on a telegraph key the necessary power was provided by a series of gravity cells. A diagram of the circuit showing how these cells were used is illustrated above.

then served five years under Washington Allston, a teacher of painting who took Morse to England, where in four years, Morse became a successful painter. Over 800 of his paintings are still in existence. He was president of the National Academy of Design from 1826 to 1845, and was Professor of Art at New York University from 1835. The financial panic of 1837 stopped him painting, so he pushed the development of the telegraph.

On June 10, 1871 a statue of Morse was unveiled in Central Park, New York City. The telegraph system had grown so extensively that the workers contributed to a fund for this statue, and that same evening Morse was present at the Music Hall, Fourteenth Street, to send his farewell message, "Greetings and thanks to the telegraph fraternity throughout the world. Glory to God in the highest, on earth peace, goodwill to men. S. F. B. Morse." All lines in North America were connected to hear this message.

Morse's life was not happy. He seemed to be always in trouble, defending his rights through a long series of law suits, and carrying on disputes with people near and far. But he lived to see his system of telegraph extended throughout the world. He died of pneumonia on April 2, 1872, at age 81.

Sir Charles Wheatstone

Sir Charles Wheatstone (1802-1875, England) had the greatest difficulty making friends due to his shyness and sensitiveness. He could not lecture because of shyness, so Faraday described Wheatstone's investigations. At age 14 he started work with his uncle, making musical instruments. He spent more time reading books and ex-

perimenting with accoustics. Wheatstone at age 21, took over an uncle's business, but gave up after six years to devote his time to research. In 1834, at age 32, he became professor of experimental philosophy at King's College, London.

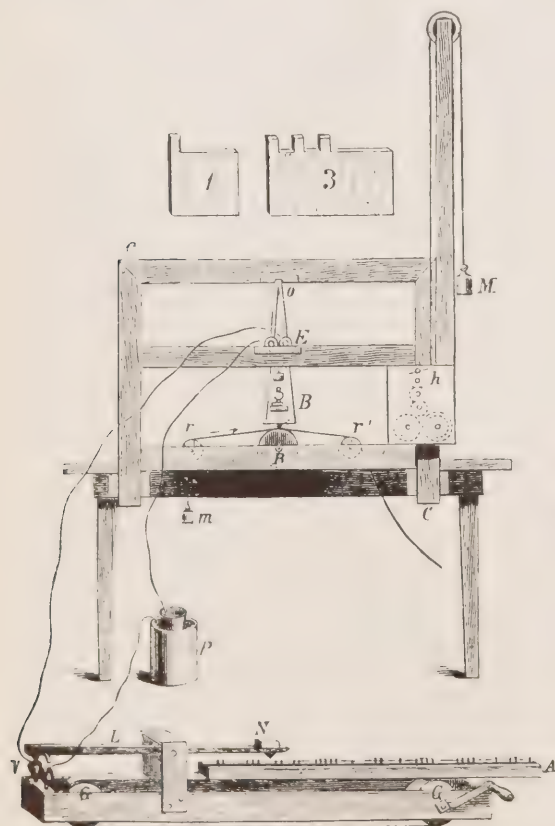
In 1837 Wheatstone became associated with William F. Cooke (1806-1879), and they jointly obtained a patent for an electric telegraph. Wheatstone continued with his great contributions to science. He invented the ABC telegraph instrument, printing telegraph receivers, automatic transmitters, electrical chronoscope, stereoscope, kaleidophone, concertina, cryptographic machine, metallic thermometers, registering meteorological instruments and electric measuring instruments. The Wheatstone bridge, an instrument for detecting faults in cables and transmission systems, though invented by S. H. Christie in 1833, was used in many researches by Wheatstone.

In 1868 Wheatstone was knighted after his work in submarine cable telegraphs and his successful automatic telegraph transmitter. He was married in 1847 and died in 1875, at age 73.

Cyrus W. Field

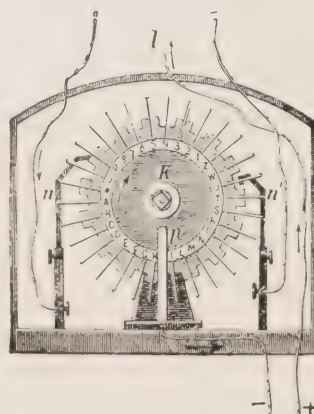
Cyrus W. Field, a well-to-do merchant, entered upon the great enterprise of laying the Atlantic cable in 1854. Gutta Percha insulation was first used by Siemens in England in 1843, but various unsuccessful methods were tried. In 1857 a cable was laid from Dover to Calais which continued in use until 1875. In 1857 the first attempt to lay the Atlantic cable failed. In 1858 a second

(Continued on page 26)

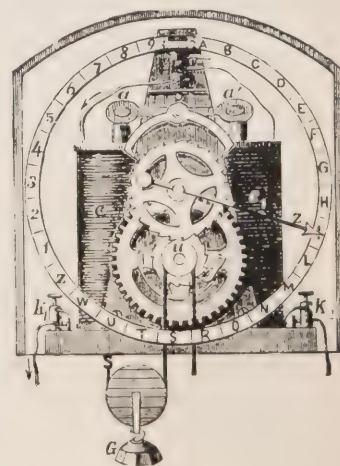


Morse's First Telegraph.

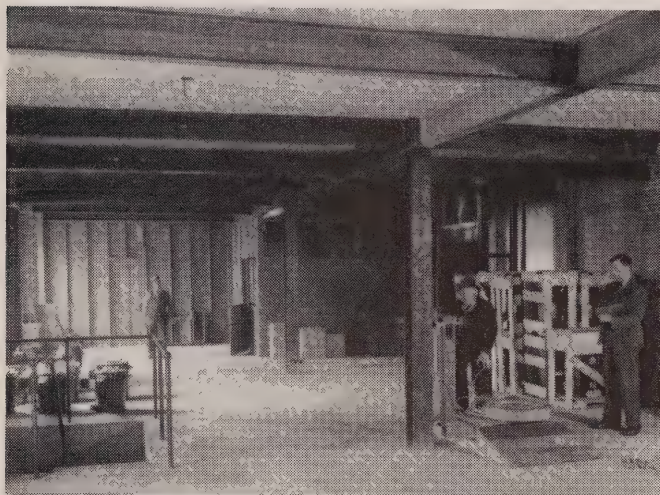
WHEN THE financial panic of 1837 caused Samuel F. B. Morse to give up a noteworthy career as a painter—and over 800 of his paintings are still in existence—he turned his attention to the development of the telegraph. His first telegraph is shown on the left. To the right is a reproduction of the first telegraph developed by Sir Charles Wheatstone in association with William F. Cooke.



Wheatstone's Step-by-Step Telegraph.



NEW QUARTERS FOR KINGSTON R.O.A.



KINGSTON'S RURAL Operating Area office has just moved into new quarters in a renovated building. Directly to left is a general view of the office. Ralph E. Fisher, superintendent, is seen chatting with a customer. The feminine members of the staff are Ila Windsor, Ruby Davy, and Betty Burnett. Top left shows part of the well-arranged general storage space over the office which is connected by elevator with the main floor. Foreman Ross Wilby looks on while Archie Waller weighs a coil of wire. Jack Willis, another staff member, can be seen to the left. Top right shows the garage entrance with several trucks and one of the line gangs that look after the 324 miles of line and the 2,300 customers in the Kingston R.O.A. To the left of this group is superintendent Fisher and beside him foreman Wilby.

WHEN DAY IS DONE

(Continued from page 5)

lamps later found their way from Egypt to Crete and there is one from Cnossus, about 500 B.C. in the Royal Ontario Museum.

A piece of direct evidence of the general use of floating wick lamps is portrayed in an Egyptian hieroglyph. This is sometimes interpreted as an incense bowl but looks much more like a lamp and flame.

The simple dish with a wick floating on oil did not see its last days in Egypt by any means. The idea spread east and in later centuries was the popular light in thousands of mosques, synagogues and eastern palaces. To this very day, the natives of New Guinea use cocoanut halves as lamps with floating wicks, and in certain parts of Brazil the native houses are still lit by clay saucers with flaming wicks floating in peanut oil.

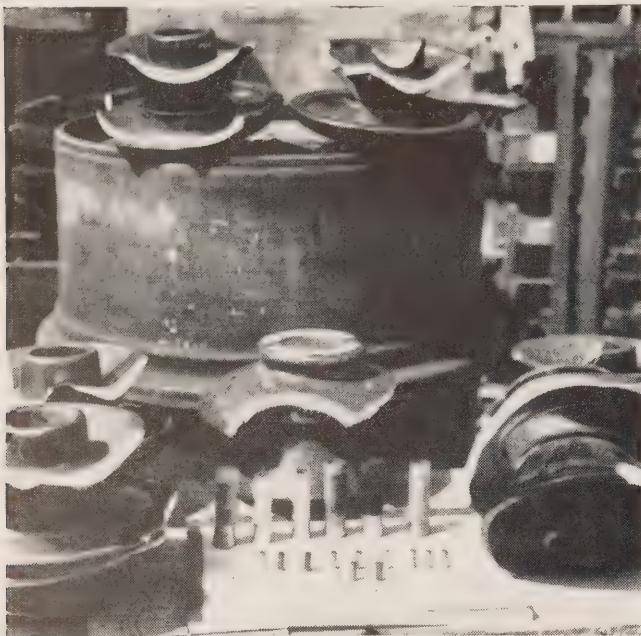
SERVE 4,000 MEALS

(Continued from page 17)

mercial bake ovens fulfil the most exacting demands for the scientific baking of pastries, muffins and tea biscuits. Sealed-in heat assures a comfortable place for the baker. In this section the boys' favourite milk puddings are also cooked in another steam cooker.

The kitchen staff work with deftness and delight in their well-lighted and thoroughly ventilated work rooms. The chefs have a private thoroughfare on each side of their long work tables which saves time and unnecessary motion. Variety in meals is made possible by the use of electric grills, electric fry-kettles, electric slicing machines and other economical devices. Constant hot water helps to keep everything spick and span. A newly designed electric dish washing machine sterilizes and washes dishes at the rate of 10,000 pieces per hour. Due to the speed of operation, eleven people scrape, stack and store dishes in record time.

WANTON DESTRUCTION



COLLECTED BY Hydro linemen as they effected repairs, these broken insulators were damaged by thoughtless and irresponsible individuals. The spent cartridges (in the foreground), that were also collected, bear evidence as to the cause of the damage.

***I**N an effort to stamp out wanton destruction of insulators on Hydro poles, provincial and local police are co-operating with the Commission in various parts of the province. The entire cost of a damaged insulator cannot be reckoned entirely in dollars and cents. There is the question of inconvenience which may be caused by a power interruption not to mention the unnecessary work made for busy repair gangs and the materials required to replace broken equipment. Thoughtless and irresponsible individuals who select insulators for target practice are also creating a hazard for others.*

J. H. Mackay of the Commission staff who has had many years of experience in transmission work, has written the following brief article in which he records his observations of this wanton practice.—THE EDITOR.

Bang! . . . Zip! and another insulator is stripped of one or more of her petticoats, she can't carry on in this almost nude condition so she flashes over and interrupts the important duty performed so faithfully through fair weather and foul for perhaps many years.

Apparently young vandals armed with small bore rifles and shot-guns wandering along the Commission's right-of-way in search of small game or something on which to test their marksmanship take a fiendish delight in using as targets these insulators that are so important a factor in the dependable transmission of power and light to factories and homes throughout the province. These boys, old enough to be entrusted with fire-arms, must know that wilful dam-

age to property is a criminal offence yet may not realize to what extent their target practice may interfere with the continuous supply of power so essential to industry and the home.

A shattered insulator may cause a flashover, throw out the station circuit-breaker, disconnect the line and leave the district and all its customers without power or light for a considerable period of time. Before service can be restored a patrolman must go over the line, locate and report the whereabouts and nature of the trouble, after which a repair crew with necessary supplies and equipment must be despatched to the seat of the trouble, repair same and report back to headquarters before the line can again be made alive. This all takes time, in some cases hours may elapse before the line can again be put into commission and in the meantime considerable loss and inconvenience has been occasioned to all concerned.

BIRTHDAY PARTY AT LISTOWEL

Members and wives of the Listowel rural power district had a birthday party at the Royal Hotel in Listowel recently. It was superintendent C. R. Cole's birthday, and there was a big cake and candles too.

The "get-to-know-each-other, get-together," arranged by Margaret Schneider and Margaret Wilson, both members of the staff, was voted a huge success. In fact it is planned to hold annual banquets from now on.

The evening's programme, under the chairmanship of J. D. Hood, rural foreman, included a sing-song and court whist.

Among the guests were Mr. and Mrs. R. B. Hanna and Miss Lillian Tabberner of the Listowel Public Utilities Commission, and Miss Florence McComb of London.

DOWN THROUGH THE YEARS

(Continued from page 24)

attempt failed, followed by a third which completed the cable by August 7, when Cyrus Field sent the first telegram. But the insulation became defective and it was not used after September 1. A fourth attempt also failed. In 1866 the fifth try was made by the Anglo American Telegraph Company, and the transatlantic telegraph line was opened August 4, 1866. Since then cables have been laid in all oceans of the world.

Steinheil, a pupil of Gauss and Weber, carried on experiments in Germany, resulting in the development of a telegraph system in that country.

The development of any system is built on the inventions and discoveries of many workers, and it is impossible to mention more than a very few.

It is a good idea for boys and girls to read regularly, a little time each day, on one or more subjects, to become really expert in the knowledge of those subjects. A study of the lives of those who have achieved success show that they started very early in life, that they put in long hours, they sacrificed pleasures, suffered poverty, failures and disappointments, but that they continued with grim courage and determination until they succeeded in their particular field.

Watch for the next part of the History of Electricity.



Hydro HOME FORUM by Edith Emma Muir HOME ECONOMIST

Listen! What have you been doing to help these folk who are so badly in need of food and clothing?

The Hon. Paul Martin, Secretary of State, who returned to Canada, recently said: "No words of mine can picture the actual condition of the sick and starving and ill-clad in Europe's stricken land. Millions of people need help, they need it **now**—before it is too late."

True, more food is likely to become available at harvest time, but that's a long, long time to go hungry. Meanwhile, the emergency must be met. Action is required—voluntary action in our own homes and shops, and in our eating habits. The individual response will pile up an impressive result. Foodstuffs will become automatically available if Canadians will share their daily food requirements necessary for existence. Bulk shipments will go forward with efficiency and speed—compared to individual bundles and shop parcels.

What you can do? Share and play fair: (1) Use less white flour, edible fats and oils, eggs and cheese. We have an adequate supply of perishables to substitute for these necessary foods needed so badly in Europe. (2) Prevent waste. Plan shopping carefully so that there will be no mouldy crusts or bone-hard cheese. Provide proper storage facilities. (3) Plant late vegetables. This is the time to plant a row of lettuce, winter cabbages and tomato plants.

As you try on Junior's last summer clothes, you may know even before you measure them, how much he has grown. Shoes that are too small, slacks that are too skimpy and jackets out of style, should be saved for the clothing drive. Old clothes that you have tucked away may be laughed at here today, while the women in Europe will cry for sheer joy when they get them.

All washable goods should be clean but other garments need not be dry cleaned. Have them ready for the col-

lection dates between June 17th and June 29th.

* * *

HAPPY DAYS are here again for those who enjoy fresh berries—and don't we all! Week by week they will come into our stores—and disappear—first strawberries, then blackberries, gooseberries, raspberries, blueberries and loganberries. They are deliciously fresh from the garden and a few will make a delectable dessert.

FRESH STRAWBERRY PIE: Soften 1 tbsp. plain, unflavoured gelatin in $\frac{1}{4}$ cup cold water. Wash, stem and slice 4 cups strawberries. Cook one cup of berries with 1 cup water until berries are soft; strain and add this hot liquid, stirring constantly; stir in softened gelatin; chill until syrupy. Fold in remaining 3 cups strawberries; pour into baked 9-inch pie shell; chill until firm. Serve with whipped cream.

RASPBERRY SPANISH CREAM:—Sprinkle 1 envelope of gelatine over $\frac{1}{4}$ cup cold milk. Scald $1\frac{1}{2}$ cups milk add tbsp. sugar and $\frac{1}{4}$ cup raspberry juice. (made by precooking $\frac{1}{3}$ cup raspberries in $\frac{1}{2}$ cup water). Pour the hot liquid over 2 slightly beaten egg yolks. Cook in double boiler stirring constantly until custard coats silver spoon. Add gelatin, pinch of salt and $\frac{1}{3}$ cup raspberries. Chill in electric refrigerator until the mixture begins to thicken. Fold in 2 beaten egg whites; pour into mold rinsed in cold water, chill until firm, unmold and serve with cream. Serves 6.

FRESH FRUIT FLOATING ISLAND:

Combine 2 tps. cornstarch, 4 tps. sugar and f.g. salt. Mix well and add 2 cups milk. Cook over hot water until slightly thickened, stirring constantly. Beat 3 egg yolks and add milk mixture gradually to egg yolks. Stir and return to range to cook 2 or 3 mins. longer. Cool. Add $\frac{1}{2}$ tsp. vanilla and 2 cups blackberries. Top with Meringue Peaks: Add $\frac{1}{4}$ tsp salt to 3 egg whites and beat adding 6 tps. sugar

gradually and $\frac{1}{4}$ tsp. vanilla. Pile meringue in mounds on greased pie tin. Set in a shallow pan of water and bake in preheated oven of 325 degs. for 30 mins. Slip on top of servings.

* * *

GOOSEBERRY JAM: Wash and top and tail gooseberries. To 4 cups fruit ($1\frac{1}{2}$ lbs.) add $\frac{1}{4}$ cup water. Cook till berries are tender. Add 1 lb. sugar and stir until dissolved. Boil 5 mins. Pour into sterilized jars and seal with paraffin wax. Label and store in a cool place.

CANNING FRUIT IN WATER: It necessary for dietetic reasons or lack of sugar, fruit may be canned in water instead of syrup. The addition of sugar to canned fruits has 3 desirable effects: (1) It improves flavour, (2) it helps to retain colour, (3) it helps to retain the texture.

Therefore, if possible, use a sugar syrup—even if it is very light (1 cup sugar to 4 cups water).

But the addition of sugar is not necessary to preserve canned fruit. You can pour boiling water over a packed jar of prepared fruit, cap and process. In boiling water-bath allow 15 mins. for pints, 20 mins. for quarts. If the fruit and jars are sterilized by processing and the jars are absolutely airtight the fruit will keep whether it is put down in water or in syrup.

PRECAUTIONS IN JAM MAKING:

1. Cook fruit before adding sugar as a general rule.
2. Boil rapidly—slow simmering destroys the pectin and darkens the colour of jam.
3. Add just enough water to keep fruit from burning. Stir with a wooden spoon and watch carefully.
4. A little butter added to jams during cooking period helps to keep down foaming.
5. Test jam by dripping from side of spoon, when done it sheets from spoon.

Lighter Lines

Pat—Have yez seen my coat anywhere?
Mike—Are yez sure ye had it on when ye took it off?

* * *

Old songs are said to be coming back. If we could only get the weatherman to warm up over that once-popular hit "There'll be a hot time in the old town to-night!"

* * *

Sambo—Which would you-all rather be in—a collision or an explosion?

Mose—A collision, nat'rally.

Sambo—How come?

Mose—Well, in a collision, dere you is. In an explosion, where is you?

* * *

Milly—I wonder why a moth eats a hole in a rug.

Flossie—Maybe he wants to see the floor show.



"Well, then, Johnny's bicycle didn't do anything bad. Can the bicycle come out?"

A coloured evangelist was endeavouring to stress the severity of the punishments which await the unrepentant sinner in the hereafter.

"I reckon," he said, "at one time or another you've all been in an iron foundry and seen dat red-hot metal flowing into de moulds. Well, dey calls dat stuff ice-cream in de place I'se talking about."

* * *

The music master, running his hand through his hair, stormed about the studio.

"Mademoiselle, it is impossible. Vedder I play on die vite keys or vedder I play on die black, it makes no difference. Always you sing as if I were playing in der cracks."

* * *



"Here he comes again!"

Farm wife—It was very good of you to come all this way on a night like this to see my husband.

Doctor—Not at all. I had a patient down the road, and I thought I might as well kill two birds with one stone.

* * *

"Now that real rubber is being used again in golf balls," advises a manufacturer, "the average man's game should improve one hundred percent."

Maybe it will. But he will probably find Byron Nelson and other depressing fellows cutting par in half.

The sergeant was fed up with the time it took for a new recruit to master a simple drill.

"What did you do before you joined up?" he demand.

"I worked in a bank," the soldier replied.

"Oh," scoffed the sergeant. "I suppose you mean you wiped off the desks, filled the ink-wells and emptied the waste-paper baskets."

"No," replied the recruit with briding dignity. "I was the assistant-accountant. But we did keep a few old sergeants around to do the work you mention."

* * *



Wash dishes for a meal, eh?—
Let's see your menu first!"

DOWNWORDS PUZZLE

Last Month's Solution

1	2	3	4	5	6	7	8	9	10	11	12
M	A	T	A	B	I	T	C	H	U	A	N
A	B	I	R	E	N	R	A	A	N	P	A
I	O	M	T	A	T	A	N	L	I	P	T
N	R	I	E	V	E	D	D	L	C	A	V
T	I	S	M	E	R	I	E	E	O	R	R
E	G	K	I	R	R	N	L	L	R	I	A
N	I	A	D	S	E	G	A	U	N	T	L
A	N	M	O	K	G	P	B	J	L	I	I
N	A	I	R	I	N	O	R	A	I	O	S
C	L	N	U	N	U	S	A	H	O	N	T
E	S	G	S	S	M	T	S	S	N	S	S

Foreman—Get a move on, you there. We've got to get through this job before we knock off.

Slack worker—What's the hurry? Rome wasn't built in a day.

Foreman—Maybe not. But I wasn't in charge of that job.

* * *

An old "ma" kangaroo at the zoo Had a pouch that would hold quite a few

When they wanted a ride

Her babes climbed inside

And just whistled "to-tootie-To."

#his and #hat

By The Editor

JUNE IS a month which is usually associated with roses and weddings. Speaking about the latter, some people may not know the origin of the practice of throwing rice on newly-married couples. As far as we can ascertain, this custom comes from India where the Hindus regarded rice as a symbol which would assure the success of those who might have the desire to establish satisfactory relations with the stork. If this commodity were to be regarded as a necessary requisite, the present food shortage could have a depressing influence upon vital statistics. Many appear to have gotten along very well with the good old-fashioned confetti!

* * *

WITHIN TWO or three hundred yards of the Commission building on University Avenue is one of the most beautiful and arresting displays it has been our privilege to see. It is a Royal spectacle in every sense of the word for these 5,000 tulips, planted in beds in front of the Parliament Buildings at Queen's Park, were a gift from Holland's Queen—Wilhelmina Helena Pauline Maria of Orange-Nassau. Hundreds of people have been seen at the park enjoying a "Dutch Treat" in recent weeks.

* * *

A COLLEAGUE has directed our attention to two interesting items published recently in *The Electrical World*. We had a good chuckle over them and thought they were worth passing along to our readers. Here they are:

* * *

DESPERATE IS the remedy of the chief of police of Winchester, Va., to protect the city's street lights. He has ordered the police to shoot on sight anyone they see knocking out a street light. Young vandals, he said, have been costing the city an increasing amount of money, and it is easier to "shoot them and then arrest them"

because "it's easier to arrest them after they're shot." Police usually carry rifles loaded with buckshot.

(We imagine that when a policeman scores a hit it would be, in every sense of the word, a "bull's" eye.)

* * *

ELECTRICITY HAS come back to St. Nazianz, Wis., after having been away for 23 years. A storm in 1922 disrupted the village distribution system, and the utility service in the village did not feel justified in rebuilding the lines. Last December, the businessmen's association raised \$485 to rebuild the distribution system, and service was restored before Christmas. (Our informant described this as "a record outage.")

* * *

WE READ with interest of the invention of a streamlined, electrically-operated wheelchair which was demonstrated for the first time at Shaughnessy Hospital, Vancouver, recently. "The Gad-about," as it is nicknamed, is the answer to a paralyzed veteran's prayer. The young inventor, Norbert T. Aubin, dreamed about the plans while he lay paralyzed in a hospital in London, England. The chair, powered by two batteries specially designed for quick charge, has three speeds forward and a reverse and a maximum speed of ten miles per hour with a radius of 40 miles. It is 44 inches long, weighs 274 pounds and can be operated all day on one charge of the batteries. Aubin says its successors will be made of impregnated plywood, bringing the weight down to 200 pounds. The chair is custom built for paralytics and is mounted on tires from aircraft tail wheels. It is controlled by a throttle on the left arm of the thickly-cushioned seat and a brake is installed on the right arm and a long curved stick, attached to the front wheel, does the steering. This chair is designed to fit under a table so that the driver can

eat his meals, and it is compact enough to be driven into a theatre or to be turned inside an elevator. Already, a Vancouver service club plans to donate six of the machines to Shaughnessy Hospital for in-patients.

ONCE AGAIN we are indebted to G. M. B. Lumgair of the Commission's accounting department, for a contribution in verse as follows:

SONGTIME

In a garden fair,
In the month of June,
Where daffodi's danced
To his merry tune,
A bluebird bowed
To a bumblebee:
"You're just the gallant
I want to see.
No money have I
But could you spare
Any money at all
For my lady fair?"
Said the bumblebee:
"I need no pay
The song you sang
For me yesterday
Did much to lighten
The load I bore—
Besides I can always
Gather more!
No time shall I,
Have for a song
Like you I'll be busy
The whole day long."
Said the bluebird then:
"For in that tree
My wife is expecting . . .
Two or three!
Quoth the bumblebee,
And waved his wing:
"No one is ever
Too busy to sing!
But you must really
Excuse me now
Or my Queen will be raising
A Royal row.
I must hie me home
To the hive to store
The honey I have—
Ill be back for more!"

For The LADIES



OVER 200 lady members and friends of the Ontario Hydro-Electric Club met at an afternoon Bridge at Sherbourne House Club in Toronto, recently. There were table prizes, as well as several lucky number prizes, and refreshments were later served. Camera impressions of this popular annual event are shown on this page.

THE "PASTEBOARD gladiators" in the top picture are, left to right, Isabel Helme, who recently left the Commission to be married; Rita Gouin, Geraldine Noad and Betty Taylor of the H.E.P.C. staff.



IN THE top right hand picture, Mrs. Challies, (left) wife of Hon. G. H. Challies, H.E.P.C. vice-chairman, presents a lucky number prize to Helen Clements, while Margaret Gahagan and Helen Dunlop look on.

A GROUP, taken in the attractive sun room, is shown in the third illustration.



MRS. MARY RUSSELL (left), now retired from the Commission staff, receives a lucky number prize from Mrs. Davies, wife of H. C. Davies, president of the Ontario Hydro-Electric Club.



COMMITTEE MEMBERS in charge of affairs: Helen Dunlop convener; Elsie Ball, secretary; Margaret Gahagan, treasurer; Bruce Irvine, Iona Samis, Audrey Hitchman, Winnifred Wallace, Margaret Thompson, Winnifred Walker and Isabel Helme. Other committee members, not shown, were: Dorothy Fromow, Theresa Dillon, Lorraine Gauthier, Emily Janson and Yvonne Greene.



ANOTHER WINNER: this time, Mrs. C. V. Somers (right) is the recipient from Mrs. Thomas H. Hogg, wife of the Commission's chairman, while Margaret Gahagan



HYDRO MEN RECEIVE LIFE SAVING AWARDS

During the month of May, life saving awards were presented to two members of Public Utilities Commissioners and one to a group of the staff of H.E.P.C. of Ontario.

On May 20 Charles W. Wilson, superintendent of the Acton Public Utilities Commission received The Canadian Electrical Association medal award for the resuscitation of Robert E. Dickson, who came in contact with a 230v service wire when his climbers cut out on a pole on July 24, 1945. The award was made at a group meeting of employees from various utilities in the offices of the Board of Light and Heat Commissioners at Guelph.

On April 15, 1946, Clifford Bright, an employee of the Galt Public Utilities Commission applied artificial respiration on Jerry Braund, age 13, who received electrical shock and burns when he came in contact with a 13.2kv. conductor while attempting to climb to the roof of a sub-station. Mr. Bright was presented with the Canadian Electrical Association medal at Galt on May 20, while J. E. Teckoe, Jr., Manager of the Galt Public Utilities Commission, received a certificate of assistance.

Employees of the Sutton Rural Operating Area have been recognized by The National Safety Council for the second time, this time receiving the President's Medal award for the resuscitation of Lawrence Handysides who was overcome by suffocation in a well near Sutton on October 26, 1944. Certificates were awarded to Messrs. J. D. Tate, L. C. B. Lee, C. E. Carpentier and M. C. Fountain.

These presentations were made by Wills MacLachlan, acting on behalf of the President of The Canadian Electrical Association and The National Safety Council.

CHARLES W. WILSON (left), superintendent of Acton Public Utilities Commission, has every right to look happy as he scans the certificate presented by Wills MacLachlan, secretary and engineer, Electrical Employers Association of Ontario (seated), for having saved the life of a lineman last year. E. R. Lawler, district engineer of The Hydro-Electric Power Commission of Ontario, J. R. MacArthur, Hydro commissioner at Acton, and reeve C. L. Kirkness were also on hand to extend congratulations as Hydro News got this photograph.



GEO. C. TERRY

GEORGE C. TERRY, who was born in 1877 and commenced a long colourful career with Hydro in 1909, died recently at his home in Oshawa. For many years, the late Mr. Terry was line superintendent, working out of London, on the Western division of the Niagara system. He was loaned to an English firm and went to South Africa to supervise the erection of transmission lines from 1923 until 1925. He retired from the Commission on pension in August of 1944.

ARTHUR C. GOODWIN

A. C. GOODWIN, who was born in 1879 and received his education in Grimsby and Hamilton and who graduated from the University of Toronto as an electrical engineer in 1902, died recently, less than two years after he had retired on pension from The Hydro-Electric Power Commission of Ontario. The late Mr. Goodwin had practised his profession with the Aluminum Company of Canada and Westinghouse in Hamilton before joining the staff of the Commission in 1909 where he became assistant supervising engineer. He is survived by his widow and one daughter, Ruth.

JOHN M. HARKINS

JOHN M. HARKINS, who was an electrical engineer with The Hydro-Electric Power Commission of Ontario, died suddenly on May 21 at his home in Toronto, only a short time after returning from work. Mr. Harkins joined the staff of the Commission in 1921, two years after he had graduated in applied science from the University of Toronto. He is survived by his widow, the former Florence M. Daley, and three sisters, Mrs. R. S. Weir, Mrs. F. W. Canning, and Mrs. W. D. Brown, and one brother, Dr. Edward Harkins.

OLD POLES SALVAGED BY HYDRO CONVERTED INTO USABLE LUMBER

Over 2,200 old poles have been converted into usable lumber since the inauguration of a salvage plan by the Commission a little over a year ago, according to information given to Hydro News. And the approximate value of this lumber and timber produced to date is \$6,000.

This idea of salvaging old poles, it is reported, was jointly formulated by Robert Lightbody of the H.E.P.C. Bloor Street salvage department, and E. R. Knowlton, superintendent in charge of the Hamilton service building.

Mr. Lightbody pointed out that considerable quantities of discarded transmission line poles are continually being removed from service in the rehabilitation of transmission lines throughout the province. In the past there didn't seem to be any economical or practical way of re-using these poles, so they were disposed of for a nominal charge in the field to anyone who would haul them away.

When the shortage of lumber became acute in 1944, however, the possibilities of converting old poles into usable lumber were thoroughly investigated. The result was that a portable sawmill and planer were set up at the Hamilton service building, where a trial lot of 180 discarded poles, brought in from a nearby district, were sawn into lumber. It was expected that this would be suitable for crating purposes, but the results were much more encouraging. From this one lot of poles, good lumber and timber to the value of \$1,500 was obtained, which was \$700 more revenue than if the poles had been sold as before, even after allowing for hauling and sawing costs.

The results, together with the increased shortage of lumber, prompted further developments along these lines. Up to December 31, 1945, a total of 1,414 old poles had been sawn up. The lumber and timber obtained are being

used for a variety of purposes, including booms and cribs at DeCew Falls; temporary construction at Stewartville development and DeCew Falls; temporary buildings at Hamilton service building, and for crating purposes.

During January, an additional 137 poles were hauled to Hamilton, and it was expected this number would be increased to 810 by the end of February when other loads were brought in. The lumber from these poles will be used in the construction programme now in progress across the province.

In addition to old poles, other sources from which lumber can readily be produced have been found. In this connection, some high quality pine lumber has been produced from surplus, as well as dying trees taken off the Commission's property at Lambton Park near Toronto. British Columbia fir timber, salvaged from a discarded trestle at Chats Falls was also cut up into smaller sizes, which are in greater demand. A considerable quantity of this timber has been used in permanent construction. Also, the forestry division removes from time to time standing timber adjacent to transmission lines. During the past year a number of saw logs, mostly oak, were obtained in this way. And the product from them has been used or stocked to provide skids for the movement and shipping of transformers and heavy construction equipment.

By-products from the sawmill, mostly slabwood and sawdust, added in the neighborhood of \$400 to the revenue. The approximate value of lumber and timber produced to date is \$6,000. Costs of production ran around \$3,500, including allowances up to \$1.00 per pole to the system from which the poles were removed.



EATING ITS way through a well preserved Hydro pole that will soon be turned into boards or planks, this buzz-saw has again become useful after having been idle for a few years.



THIS PILE of lumber has been dressed and can be used in some of the special jobs of crating or construction of temporary buildings. It is kept inside to protect it from the weather.



CANT-HOOKS are ideal for skidding the individual pole along the ground but it takes a crane to move them in quantity. The sling is a wire cable which is placed as close as possible to the middle of the poles in order to balance the weight. Before these derricks were available, a pole with a pulley arrangement was erected beside the pile and the logs were raised into the air individually. This was known as a gin pole and is still used in the smaller lumber camps in the northern part of the country.



USING THE same technique as a lumberman, these Hydro men "square off" the end of a discarded pole before it is drawn up the ramp and into the saw mill where it will be converted into lumber. The art in using a cross-cut saw lies in each man pulling on his handle. If one were to push on his end, the saw would buckle and jam in the track. On really large logs, wedges are inserted, after the saw has started, to spread the opening and give the saw a full bite.



AN ENDLESS belt, with teeth in it, drags these logs up the ramp where they pass under a row of special lamps that afford excellent lighting. Once in the shed, the logs are put on a frame that gauges the distance or thickness of the cut that is to be made by the electric buzz-saw. In sharpening a saw, which is necessary every so often, each tooth must be filed and shaped—a job that, in itself, was a specialized trade not so many years ago.



NO SIR!, the man on the right was not rolling a cigarette in the mill when this picture was taken. He had been "sniffing" the cedar saw-dust that piles up on the floor under the saw. The no smoking rule is always observed around lumber camps and Hydro's mill near Hamilton is no exception. The lumber used in building the shed that houses the sawing mechanism was made from old poles and erected after the mill had been put into operation.

(More pictures on next page.)



THERE IS something appealing about the smell of fresh lumber but when you are working with it every day as these men are, it soon loses its novelty. This particular pile is Ontario cedar, which will be utilized in building temporary buildings and cement forms. Cedar is one of the best kinds of wood to use in any underground work or in places where it will be exposed to moisture because of its characteristic resistance to the elements.



SCRAP ON the truck is measured and sold by the cubic yard and is composed of weathered cuttings and ends that cannot be used commercially. This truck is filled with slabs and butts which are being measured up before being driven away to be sold as fuel—a rather scarce commodity at present. In early days, wood that could not be turned into usable logs or lumber was burnt on the spot.

JUNIOR ENGINEERS JOIN COMMISSION: SELECTED FROM RECENT GRADUATES



NEWCOMERS TO Hydro — a group of junior engineers selected from recent graduates of Universities all across Canada. Most of them are ex-service men. They have been taken on the regular staff of the Commission and will be put through a two-year course that will include both instruction and practical work connected with the various phases of activity in each of the Commission's departments. This plan has been devised for the purpose of giving these young men a broad understanding of engineering as it applies to a public utility and also of discovering their individual capabilities and where best they can fit into the Commission.

In the group shown here are: N. B. Dean, R. C. Paul, A. L. Brown, D. K. White, J. E. K. Foreman, C. G. Taylor, P. J. Garlough, D. A. Ramsay, A. R. Potts, G. B. Pearson, D. G. Harkness, E. E. Major, R. R. Asselstine, C. Lindsay, G. S. Boa, J. S. N. Hammond, J. E. Bowyer, Bud Chandler, D. H. Millard, D. F. D. Woodcroft, C. N. Cunningham, J. McC. Smith, R. G. Freeman, A. J. Fort, F. S. Ballinger, H. A. Jackson, K. R. Langdon, J. D. Sparks, A. M. Lount, E. A. Washburn, C. J. Moull, A. H. Jackman, H. E. Jones, G. A. Mackie, K. G. Richardson, W. A. Pottruff, R. D. Honan.

CLEAR THINKING REQUIRED

(Continued from page 20)

for his provincial colleagues. The Ontario society now included 5,000 members and there were 3,000 student engineers under its wing. It had been successful in setting up two scholarships at engineering schools in the province, and had recommended three further scholarships to be awarded to men returned from the armed forces. It had been decided that a job evaluation such as that conducted at Ontario Hydro was the only fair way to deal with the question of salary adjustment, and a short time ago a committee had made a preliminary investigation.

"Perhaps some of you are not aware," said Dr. Lord, with a smile at Professor Young, "that it is possible to become a member of this association without actually receiving a university degree. But don't imagine it's easy. There are questions asked in the examination required that would stump many a professor on the staff of an engineering school. Any young man who passes deserves to be a member of the profession."

It was Dr. Lord's plain-spoken opinion that research facilities must be extended in this country, and that, somehow the money must be found for the purpose. Then too, it was the duty of the Association of Professional Engineers of Ontario and of similar societies throughout the Dominion to give assistance and guidance to the young men who were going through for engineering now.

Head-Table Representation

At the head table with the chairman and speakers were H. W. Lea, administrator, Department of Reconstruction and Supply; Professor R. C. Virvin, chairman Toronto Branch, American Society of Mechanical Engineers; F. H. R. Pounsett, chairman Toronto Section, Institute of Radio Engineers; W. O. Scott, president of the Association of Professional Engineers of British Columbia; A. H. Framp-ton, H.E.P.C., and chairman Toronto Section of the American Institute of Electrical Engineers; E. A. Ryan, president of the Corporation of Professional Engineers of Quebec; Dr. F. S. Howse, chairman of the Canadian Council of Radio Engineers; John Read, president Canadian Westinghouse; P. E. Poitras, past-president of the Corporation of Professional Engineers of Quebec; Dr. George B. Langford, vice-president, Association of Professional Engineers of Ontario; P. Burke-Gaffney, president of the Dominion Council of Professional Engineers; J. L. Lang, past-president of the Association of Professional Engineers of Ontario; and E. A. Cross, chairman of Toronto Branch, Engineering Institute of Canada.

GEORGE A. PHILLIPS JR.

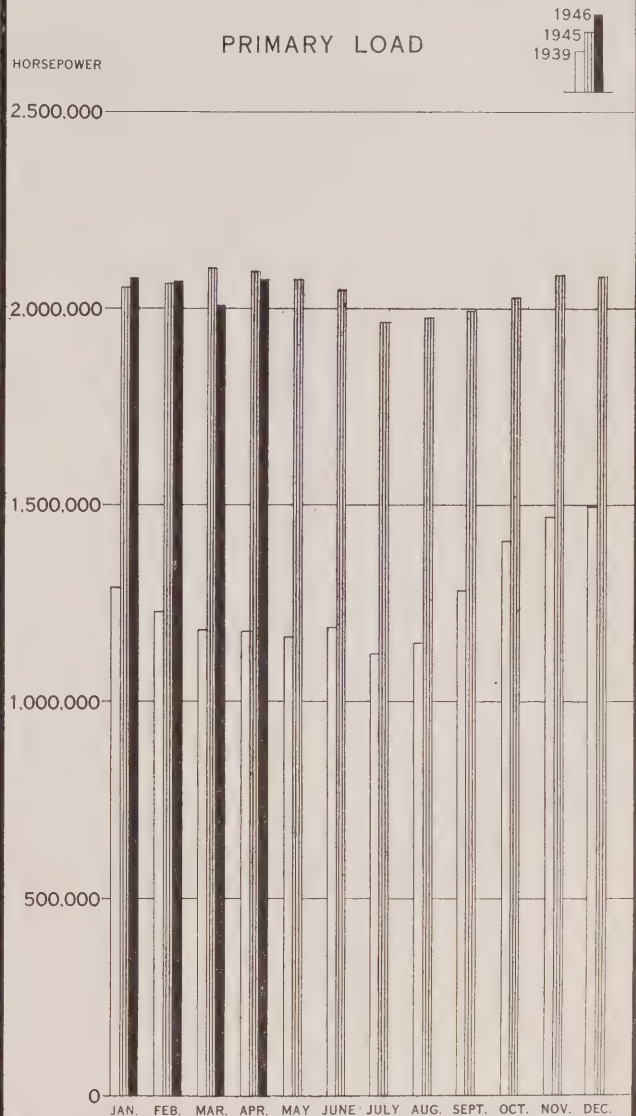
While still in his teens, GEORGE A. PHILLIPS Jr., whose father was Chief of Police in Smiths Falls for many years, started his career with Hydro delivering bills. That was 22 years ago, and in that time Mr. Phillips has been a meter reader and was acting manager for five years while Norman J. Douglas was on active service.

To say that Mr. Phillips is an ardent fisherman is putting it mildly. He goes in for both fly and bait fishing as well as trolling.

SOUTHERN ONTARIO SYSTEM

EMBRACING NIAGARA, GEORGIAN BAY AND EASTERN ONTARIO DIVISIONS

PRIMARY LOAD



PRIMARY LOADS

AREA SERVED BY	MAXIMUM 20-MINUTE PEAK H.P.		PER CENT INCREASE
	APRIL, 1946	APRIL, 1945	
SOUTHERN ONTARIO SYSTEM...	2,073,743	2,094,676	- 1.0
THUNDER BAY SYSTEM	131,233	125,067	+ 4.9
NORTHERN ONTARIO PROPERTIES	196,156	235,203	- 16.6
TOTAL	2,401,132	2,454,946	- 2.2

PRIMARY AND SECONDARY LOADS

SOUTHERN ONTARIO SYSTEM...	2,161,249	2,176,525	- 0.7
THUNDER BAY SYSTEM	153,753	136,595	+ 12.6
NORTHERN ONTARIO PROPERTIES	272,657	295,284	- 7.7
TOTAL	2,587,659	2,608,404	- 0.8

MUNICIPAL LOADS, MARCH, 1946

SOUTHERN ONTARIO SYSTEM

NIAGARA DIVISION (25-Cycle)

	H.P.	Domes- tic Con- sumers
Acton	1,854	544
Agincourt	257	168
Ailsa Craig	175	147
Alvinston	164	205
Amherstburg	1,118	734
Ancaster Twp.	466	394
Arkona	84	117
Aurora	1,706	793
Aylmer	1,039	758
Ayr	222	227
Baden	672	168
Beachville	795	167
Beamsville	621	399
Belle River	244	314
Blenheim	734	560
Blyth	139	184
Bolton	248	172
Bothwell	197	185
Brampton	3,566	1,627
Brantford	24,375	8,337
Brantford Twp.	1,971	1,476
Bridgeport	268	178
Brigden	159	125
Brussels	207	256
Burford	286	235
Burgessville	99	61
Burlington	1,912	1,234
Burlington Beach	525	732
Caledonia	485	452
Campbellville	60	50
Cayuga	220	186
Chatham	9,072	4,575
Chippawa	445	364
Clifford	138	130
Clinton	765	593
Comber	152	120
Cottam	112	131
Courtright	64	91
Dashwood	142	102
Delaware	89	71
Delhi	660	609
Dorchester	114	157
Drayton	148	167
Dresden	569	466
Drumbo	107	90
Dublin	54	61
Dundas	3,125	1,458
Dunnville	1,585	1,063
Dutton	301	234
East York Twp.	12,169	11,918
Elmira	1,533	554
Elora	525	355
Embro	172	125

	H.P.	Domes- tic Con- sumers
Erieau	134	197
Erie Beach	13	79
Essex	663	528
Etobicoke	12,108	6,157
Exeter	834	544
Fergus	1,538	770
Fonthill	234	300
Forest	684	510
Forest Hill	8,957	3,537
Galt	12,926	4,296
Georgetown	2,236	833
Glencoe	249	230
Goderich	1,939	1,361
Granton	73	85
Grimsby	1,021	655
Guelph	13,276	5,703
Hagersville	686	406
Hamilton	163,953	43,700
Harriston	552	378
Harrow	627	350
Hensall	248	210
Hespeler	3,110	825
Highgate	105	107
Humberstone	637	738
Ingersoll	3,566	1,563
Jarvis	180	163
Kingsville	760	641
Kitchener	32,746	8,718
Lambeth	181	140
LaSalle	359	259
Leamington	2,186	1,688
Listowel	1,559	801
London	48,342	19,859
London Twp.	668	494
Long Branch	1,824	1,564
Lucan	235	186
Lynden	121	105
Markham	405	350
Merlin	110	124
Merritton	9,903	962
Milton	1,599	555
Milverton	488	263
Mimico	3,587	2,306
Mitchell	821	521
Moorefield	121	56
Mount Brydges	123	166
Newbury	46	70
New Hamburg	713	384
Newmarket	2,286	1,022
New Toronto	12,382	2,029
Niagara Falls	12,334	4,984
Niagara-on-the-Lake	905	623
North York Twp.	13,147	7,019
Norwich	538	391
Oil Springs	207	104
Otterville	136	143

	H.P.	Domes- tic Con- sumers
Palmerston	699	400
Paris	2,396	1,215
Parkhill	286	315
Petrolia	1,104	825
Plattsville	193	118
Point Edward	1,698	349
Port Colborne	2,117	1,655
Port Credit	1,144	649
Port Dalhousie	1,028	691
Port Dover	538	750
Port Rowan	146	171
Port Stanley	441	825
Preston	4,443	1,689
Princeton	165	98
Queenston	131	81
Richmond Hill	628	414
Ridgetown	678	599
Riverside	1,538	1,559
Rockwood	165	174
Rodney	182	239
St. Catharines	25,179	8,742
St. Clair Beach	109	102
St. George	201	154
St. Jacobs	344	141
St. Marys	1,989	1,076
St. Thomas	9,499	4,718
Sarnia	8,088	5,403
Scarborough Twp.	6,400	5,950
Seaforth	1,097	524
Smithville	171	185
Simcoe	2,993	1,678
Springfield	100	133
Stamford Twp.	3,791	2,497
Stoney Creek	315	289
Stouffville	414	408
Stratford	8,143	4,561
Strathroy	1,783	876
Streetsville	201	208
Sutton	291	468
Swansea	3,525	2,096
Tavistock	690	300
Tecumseh	452	711
Thamesford	286	147
Thamesville	261	243
Thedford	105	166
Thorndale	103	83
Thorold	3,682	1,274
Tilbury	882	502
Tillsonburg	1,876	1,243
Toronto	408,521	154,302
Toronto Twp.	4,519	3,065
Wallaceburg	4,996	1,387
Wardsville	56	55
Waterdown	345	280
Waterford	496	397
Waterloo	6,951	2,306
Watford	414	312

MUNICIPAL LOADS, MARCH, 1946

	H.P.	Domes- tic Con- sumers		H.P.	Domes- tic Con- sumers		H.P.	Domes- tic Con- sumers
Welland	12,284	3,264	Neustadt	47	110	Kemptville	422	393
Wellesley	132	137	Orangeville	949	746	Kingston	18,399	7,867
West Lorne	355	227	Owen Sound	7,865	3,663	Lakefield	475	360
Weston	5,520	1,700	Paisley	174	202	Lanark	123	173
Wheatley	249	237	Penetanguishene	1,323	773	Lancaster	65	116
Windsor	55,981	26,909	Port Carling	124	211	Lindsay	3,703	2,289
Woodbridge	862	314	Port Elgin	522	509	Madoc	263	318
Woodstock	9,310	3,448	Port McNicoll	120	241	Marmora	183	249
Wyoming	122	166	Port Perry	332	381	Martintown	46	56
York Twp.	25,040	21,946	Priceville	10	38	Maxville	133	176
Zurich	140	149	Ripley	145	129	Millbrook	132	182
(66½-Cycle)			Rosseau	29	58	Morrisburg	428	444
Bronte	185	244	Shelburne	305	314	Napanee	1,632	897
Oakville	2,006	1,285	Southampton	604	567	Newcastle	281	230
Trafalgar Twp.	745	573	Stayner	294	341	Norwood	223	242
GEORGIAN BAY DIVISION			Sunderland	106	140	Omeme	278	173
(60-Cycle)			Tara	176	164	Orono	108	183
Alliston	500	447	Teeswater	203	233	Oshawa	16,201	6,765
Arthur	178	199	Thornton	39	67	Ottawa	41,809	15,658
Bala	138	336	Tottenham	142	161	Perth	2,024	1,110
Barrie	5,378	2,471	Uxbridge	421	423	Peterborough	19,394	6,702
Beaverton	293	331	Victoria Harbour	80	271	Pictou	1,564	1,336
Beeton	121	148	Walkerton	1,314	687	Port Hope	3,104	1,455
Bradford	330	291	Waubushene	101	235	Prescott	1,648	815
Brechin	65	53	Warton	426	437	Richmond	92	85
Cannington	220	262	Windermere	28	64	Russell	87	119
Chatsworth	108	108	Wingham	978	560	Smiths Falls	3,475	2,012
Chesley	640	456	Woodville	111	116	Stirling	375	293
Coldwater	187	159	EASTERN ONTARIO DIVISION			Trenton	5,537	1,833
Collingwood	2,609	1,650	(60-Cycle)			Tweed	327	321
Cookstown	93	119	Alexandria	341	415	Warkworth	95	135
Creemore	157	176	Apple Hill	44	66	Wellington	234	343
Dundalk	262	210	Arnprior	1,517	891	Westport	127	149
Durham	399	464	Athens	133	183	Whitby	1,658	1,054
Elmvale	143	191	Bath	53	64	Williamsburg	116	86
Elmwood	75	72	Belleville	8,642	3,939	Winchester	416	309
Flesherton	93	126	Bloomfield	123	181	THUNDER BAY SYSTEM		
Grand Valley	163	184	Bowmanville	3,397	1,234	(60-Cycle)		
Gravenhurst	1,589	593	Brighton	560	563	Fort William	16,622	73,332
Hanover	1,607	850	Brockville	5,512	3,101	Nipigon Twp.	296	243
Holstein	22	63	Cardinal	364	394	Port Arthur	20,628	6,099
Huntsville	1,277	744	Carleton Place	2,097	1,076	NORTHERN ONTARIO		
Kincardine	793	741	Chesterville	403	248	PROPERTIES		
Kirkfield	26	37	Cobden	169	160	Nipissing District		
Lucknow	432	287	Cobourg	2,553	1,443	(60-Cycle)		
MacTier	148	128	Colborne	285	285	North Bay	6,317	3,379
Markdale	214	231	Deseronto	249	395	Patricia District		
Meaford	785	757	Finch	117	107	(60-Cycle)		
Midland	4,226	1,625	Frankford	193	262	Sioux Lookout	363	512
Mildmay	168	184	Hastings	167	238	Sudbury District		
Mount Forest	633	502	Havelock	228	295	(60-Cycle)		
			Iroquois	317	279	Capreol	282	344
						Sudbury	11,794	8,734



HAPPY HOLIDAYS!

The lakes and streams and forests of holiday land are yours to enjoy . . . and yours to protect from their greatest enemy, fire.

Most forest fires are started by human beings. Thousands of acres are blackened and destroyed every year because someone was not careful with fire.

When you use a match, break it in two before you throw it away. Be sure your discarded cigarette is out too.

When you make a campfire, build it small and in a safe place.

When you leave, put the fire dead out with water.

What forests do for you:

- Give you a grand place to holiday.
- Provide beauty spots for our visitors.
- Shelter game animals and fishing haunts.
- Control flow of water . . . help even the flow of rivers so they do not dry up in summer.
- Help to ensure a year-round supply of Hydro power for you.
- Provide thousands of jobs in lumber, pulp wood and other forest industries.
- Influence climate so as to prevent extremes.

Enjoy your Holidays but protect our Forests



THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO

HYDRO! News



HYDRO ON THE FARM

VOL. 33

JULY-AUGUST, 1946

NUMBERS 7 & 8

From DARKNESS into the **LIGHT**



SO OPPRESSIVELY dismal were the blackouts inflicted on many parts of the civilized world by modern warfare that in the minds of most people darkness came to typify the evil of war and, in reverse, light to symbolize liberty and peace. So when peace finally came, city and town lights were welcomed back with real fervour and thanksgiving. To celebrate victory there was some special lighting as well, as these three pictures show. Left shows Westminster Abbey; upper right the Houses of Parliament from the river Thames in London; lower right the Arc de Triomphe, Paris.



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THE FRONT COVER



THERE is a certain something about a trim well-kept farm that captures the imagination of city dwellers these days. This month's cover—a photograph by Alan Walker of Toronto—portrays one of these farms where all the benefits and conveniences of Hydro are available at the flip of a switch—a place which combines the joys of the country with the advantages of the city.

Volume 33

July-August, 1946

Numbers 7 and 8

CONTENTS

	Page
Rotor In Action - - - - -	2
Page Three - - - - -	3
Tornado - - - - -	4
Nailed By A Board - - - - -	9
Down Through The Years - - - - -	10
Enterprising Elmira - - - - -	13
A Log Cabin Site Now Modern Farm - - - - -	16
Stewartville Development - - - - -	18
Dutton Impresses Visitor - - - - -	21
J. M. Blue Of Dutton Retires - - - - -	22
Around The Hydro Circuit - - - - -	24-25
Double Event Observed - - - - -	26
Hydro Home Forum - - - - -	27
Lighter Lines - - - - -	28
This And That - - - - -	29
When Day Is Done - - - - -	31
Monthly Load Summary - - - - -	35
Hydro At Work On The Farm - - - - -	35
Municipal Loads - - - - -	36





HERE'S A generator rotor in Action—travelling at 187½ revolutions per minute. The picture was taken by J. H. Mackay at the Commission's Ontario Power Company Plant at Niagara Falls.

* Page Three *

WINDSOR TORNADO

IT is only in adversity that the character of a people is truly revealed. When disaster comes suddenly without warning, as it did in the case of the recent tornado at Windsor, Ontario, there is no time to build up an improved moral resistance in the community. What already there may be of courage and of the spirit of co-operation can alone be expected to manifest itself. It speaks well for the citizens of Windsor that there was no panic in the face of calamity, and that the resources of the city, both public and private, were spontaneously offered in the work of rescue and relief.

With the first news of the tragedy, offers of assistance poured in to the city hall, to the police stations and to the various service organizations throughout the city. Citizens, almost without exception, were anxious to lend their cars and to give what other assistance they could to authorities and to the over-worked hospitals. Gifts of money, clothing and food for the homeless and destitute in the stricken Walker Road suburban area were generously forthcoming.

Apart from rescue work and the care of the injured and homeless, the most imperative task was the rehabilitation of the power and lighting services. Within 22 hours after the passing of the tornado, which was accompanied and followed by storm and flood, Hydro crews from Windsor and adjoining districts, often working waist-deep in mud and water, had restored temporary service to the blacked-out areas. And within ten days, the steel towers of the high tension lines, which had been wrecked by the tornado, had been replaced, the repairs on distribution lines had been completed, and everything was back again to normal.

Lives had been lost and property destroyed. But the splendid co-operation and the high sense of service and duty which everywhere prevailed had immensely lightened the load of grief in the stricken city.

A GOOD MAN FOR DUTTON

IN the recent retirement of John M. Blue, the Dutton Municipal Council loses an old and faithful employee, who, as its secretary-treasurer, has been actively associated with the development of Hydro in the district since its inception in 1915.

It was in August of that year that the late Sir Adam Beck visited Dutton for the inaugural ceremony attending Hydro installation. With a quick perception of the character of the man, he sug-

gested that Mr. Blue should look after the transformer station which had just been constructed. After receiving the necessary instructions from the Commission's engineers, Mr. Blue undertook this task of station attendant, and on the basis of the accolade he had received from "The Father of Hydro," was immediately accepted by the Dutton council as the man to be relied upon when its committee dealt with Hydro matters.

A quiet, unassuming man of Scottish ancestry, he brought to his duties with the council a clear realization of the benefits to be derived from electrical services; and he was a tireless worker for the community, always placing the public interest above his own. His worth is summed up in the simple but comprehensive eulogy of Dutton's present reeve, V. S. Tripp:

"John Blue has been a good man for Dutton."

SUMMER HOLIDAYS

WORK of some sort or other is a natural function of mankind. Idleness has a deteriorating effect both on the individual and the community. Vacations, however, are necessary to break the monotony of toil and refresh and invigorate us for further efforts. In particular, the annual vacation gives us an opportunity to leave not only our daily tasks but also their environment behind and thus to derive the benefits that a complete change brings to mind and body.

In Ontario we are fortunate in having Nature's playgrounds within easy hail of our towns and cities. An hour or two in our car or in bus or by train and we are well away from the throb of commerce and the smoke of industry. The fishermen, for instance, may cast his bait and anticipate favourable results in streams within 50 or 60 miles of Toronto. The meadows are as alluring at that distance as they are further away and it is only a hundred miles or so to the bracing air of the pine forests. Further north, to those more actively inclined, lies a vast hinterland, with vast areas of woods and lakes and rivers inviting holiday discovery for those who still have that pleasure in store.

And so as Hydro employees, along with their other fellow Canadians, go for their annual period of relaxation, may they forget their daily tasks for the time being and then return refreshed and in that spirit which envisages an office or a factory as an outpost of opportunity for new and still greater service to their fellow men.



By The Editor

It struck at 6.18 P.M. on Monday, June 17.

And within 22 hours after the tornado had reared its whirling cloud over the Windsor district to spin a 35-mile stretch of devastation and take a heavy toll of human life, Hydro crews, marshalled from Windsor and surrounding points, had restored temporary service to the blacked-out area.

In these grim, tragic hours, during which the heroism of rescue workers and the courage of the stricken seemed to transcend the horror and ruin of the ravaged area, Hydro repair men pressed on with their job unceasingly, through flood, mud and wreckage. For many of them, who had just completed a days work when they were rushed to the Windsor area, it meant working for 36 hours without let-up except for food.

With temporary service restored, G. L. Rous of the Commission's operating department, who directed operations, and the Hydro crews, numbering approximately 200 men, set about the tremendous task of replacing fallen towers and poles and transmission lines.

In addition to two definite breaks in the high tension line 35 miles apart, the tornado uprooted eight of the 4-ton steel towers that carry the heavy single circuit line at Prairie Siding and three of the big towers of the double circuit line at Windsor. Then there were some 80 26.4 k.v. line poles which had been broken and overturned and probably 100 poles which were leaning at crazy angles after the tornado struck, not to mention the large number of poles that were down in the rural areas. To make the job more difficult the towers, poles and lines were mired deep in the mud and, in many cases, the Hydro repair men were working up to their waists in water. Despite these difficulties, the work of repairing the damage to Hydro facilities,

(Continued on page 8)

On the morning after the tornado, W. Ronald Mathieson of Hydro News arrived in Windsor to obtain first-hand impressions and photographs of the damage. His impressions are recorded in the following story.—The Editor.

By W. Ronald Mathieson

While driving into Windsor from the airport the taxi driver told us that he had driven all night for the Red Cross and that hailstones three inches in diameter had broken every window in his house. We learned from him, too, that the city was without bread and milk and many restaurants were closed but various service organizations had opened up free canteens where hot soups were available.

We drove down streets that were well patrolled by police to keep traffic moving. In one yard, a dazed and trembling woman walked about, picking up kitchen utensils and bits of crockery out of the mud, and placed them mechanically on a kitchen table that still stood miraculously upright.

On a street corner two men were up-righting an electric refrigerator that had been lifted from a back porch two blocks away and dropped into an intersection.

At the hotel, wax drippings on the registration desk told a story of their own a story of guests who had walked ten floors because the elevators were not running. People had been sitting in the lobby for hours waiting to get rooms and waiting also for the dining room to open.

Windsor's only paper, the Windsor Daily Star, was written by lamp light and published over the River in Detroit—another example of co-operation that a disaster can bring about.

Plane Reconnaissance

At the Windsor Public Utilities office, Manager Clark Keith hearing of our arrival in town, assigned a light panel

(Continued on page 9)



SMASHED AND twisted by the tornado which struck the Windsor area on June 17, one of the steel towers (top) of the double circuit line bringing Niagara power from St. Thomas is shown half-buried in a flooded field. Three of these towers, only a quarter mile from the Essex high tension station, were demolished. Then the tornado, as if actuated by a malignant intelligence, swept on across the fringe of Lake St. Clair and struck again at Prairie Siding, 35 miles east of Windsor, destroying eight towers in the comparatively new single circuit transmission line shown in the background.

FIVE OF the 26.4 kv. feeder lines in the Windsor area were put out of business by the angry "twister." At lower left is shown one of the wooden poles leaning at a giddy angle. Surveying the damage, and wondering at the force which blew a small tree into the cross-arms, are A. B. Mathison and Matt Mathison, whose near-by home fortunately escaped destruction, W. H. Jennings, a vocational school teacher, who was on temporary police duty, and L. S. Treuge and Homer B. Krug, both of the Hydro division of the Windsor Public Utilities Commission. Many Hydro poles were uprooted but few were splintered or broken.

QUICK SURGERY was necessary to restore light and power to the blacked-out Windsor area. As soon as the trouble spots on the two transmission lines were located and the "healthy" sections confirmed by patrols, the necessary work orders were secured, and Hydro "riggers" tied-in the old double circuit line east of the break with an undamaged section of the single circuit line leading into the Essex high tension station. At lower right, two "riggers" on a tower of the single circuit line are shown making the connection at a point where the two lines run closely parallel.



SWINGING INTO action as soon as it was possible, this Hydro crew, working in the Walker Road district, are seen making preparations to erect new poles to carry the 26,000-volt "feeder" lines. All vehicular traffic on the street was re-routed but it was still necessary to have police protection to keep spectators on the opposite side of the road from where the men were working.

ON TECUMSEH Road, Hydro News paused to survey the damage of the twister. The automobile on the left was parked at the curb when its driver saw the tornado coming. After the tornado had passed, the driver located the car over 100 feet from where it was left. The car on the right was whisked out of its garage at the rear of the house and skidded thirty feet to end up in a pile of debris.



THIS FOUR wheeled drive, military-type testing truck was driven down from Toronto to help in the heavy installation repairs that were made at night. It had been driven into a lane-way to provide auxiliary lighting when it became completely mired and it was necessary to put a winch over the bumper to pull it out. The lineman is C. J. Struke of London who had been working for over 17 hours and in all that time he had had only one meal.

TAKEN FROM the first of four box-cars, which were still on the tracks, this illustration shows some of the flooded area in which Hydro men were working. In the centre top of the picture one of the giant towers can be seen stretched out on the ground and directly behind it is the truck that was bogged down. Those poles, which have fallen over the culvert, belong to the telephone company.



IN SOME places, it is hard to tell where Lake Clair stopped and the water began. Thousands of acres of the richest farm land were swept by the flood. In some cases, highways were covered by water from the lake. Hydro trucks en route to Windsor, were forced to drive through deep water and members of one crew were marooned and had to be rescued from their truck by boat.

(Photograph courtesy Windsor Daily Star)

THE SCOUT troop, shown here, had been mobilized to guard against looting in the demolished areas and also to keep people away from the wreckage of homes whose walls were in danger of collapsing. The electric stove on the right, with a roast of meat still in the oven, was carried for over two blocks by the tornado. One of the scouts in the picture told Hydro News that it was his home which he had been detailed to guard.



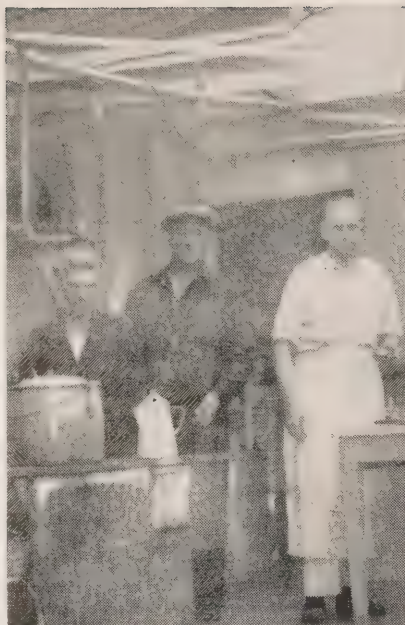
TORNADO

(Continued from page 4)

unofficially estimated at between \$75,000 and \$100,000, went ahead. Towers which were to be used in the construction of a line between Chatham and Sarnia and other towers from Hamilton were rushed to the Windsor area. Supplemented by steel obtained from Walkerville, wooden poles were restored and some three miles of 26 k.v. line were erected and, with the exception of a few minor jobs, everything was back to normal by June 27—within ten days after the tornado had struck!

Noteworthy Achievement

In performing this noteworthy achievement, involving unceasing round-the-clock work until the task was finally completed, many problems had to be faced for the area was not only blacked out but it was cut off for many hours from communication with outside points. Then there was the question of accommodation for the men, among whom were trainees from the Commission's Linemen's Training School. This problem was solved when the facilities of the naval training barracks—H.M.C.S. Hunter—were made available. There was also the problem of feeding the more than two hundred men but this was soon overcome when what was described as "a miracle" was performed by Michael Lindy, chef at the Essex construction camp, who, in his partly-demolished cookhouse, managed to turn out food and coffee at all hours. Mike, a native of Arnprior, the father of seven children,



HERE IS Michael Lindy (right), chef at the Essex construction camp, in his partly-demolished cookhouse where, despite many difficulties, he remained on the job to serve food to Hydro repair crews who were engaged in restoring service following the recent tornado in the Windsor area.

and an employee of the Commission for the past five years, had lost his hearing a number of years ago and had been "saving up" for a hearing aid. After the way he remained on the job, night and day, to serve the Hydro repair crews, Mike is to get his hearing aid right away, "the boys", as an expression of their ad-

miration and gratitude, having "kicked in" for a presentation.

Incidentally, Hydro News learned that Mike was the first chef to have persuaded David Forgan, the Commission's construction engineer, to eat a piece of lemon pie. In fact, Dave asked for a second helping after "sampling" the first portion!

Bounced Across River

To get back to a round-up of the tornado reports, however, Hydro News learned that the twister struck first at River Rouge on the American side, bounced across the Detroit river, tearing a 100-yard swath round the Windsor outskirts and skimmed over Lake St. Clair to whip through the little community of Prairie Siding. It was twelve hours before Hydro men at Windsor could establish contact with the control station at St. Thomas to get protective clearance for repair operations. Had the tornado struck another 100 yards to the north the power stoppage would have been more serious for it would have struck the high tension, N.W. 15 Essex.

Countryside Flooded

Millions of dollars of damage was done by the tornado and floods to the surrounding countryside and there was a heavy toll of life. Not one Hydro linesman, however, was injured in effecting repairs following the tornado.

While tornadoes have caused damage to Hydro facilities in the past, the June 17 twister was one of the worst in the history of Hydro.



FOLLOWING COMPLETION of the tough job in getting things back to normal after the recent tornado in the Windsor district, the St. Clair Beach Hydro-Electric Commission were hosts to mayors, commissioners and superintendents of municipalities in the area. This photograph was taken at the event which took place at the Lakewood Golf and Country Club, S. L. Hamilton, chairman of the St. Clair Beach Commission presiding. Expressions of appreciation to Hydro personnel for their work in restoring service in the tornado-stricken areas were voiced by various speakers.

"NAILED" BY BOARD IN TORNADO

When a heavy, wooden board takes off and goes through space at about a mile a minute—and there are nails jutting out of that board—it's more than embarrassing for anyone who happens to be in the way.

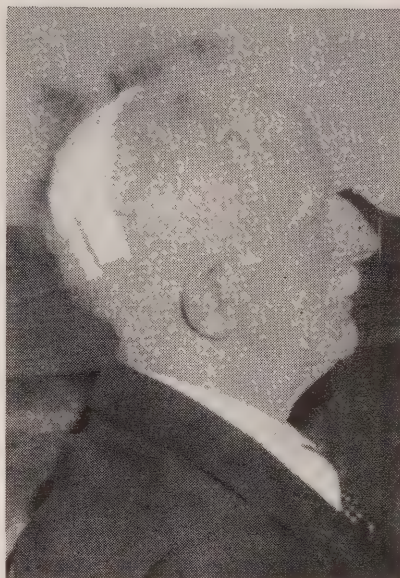
If there are any who doubt this fact, William H. Bibby, a carpenter with the Commission's construction department, will be glad to take off his hat to prove it. As a matter of fact, he did that very thing at the request of Hydro News just before the accompanying photograph was taken.

In Several Inches Of Water

"Dad"—the boys at the Essex Transformer Station all call Mr. Bibby by that name—was unfortunate enough to stop a "flying" board in the recent tornado even though he had thrown himself flat on the ground in several inches of water beside a log pile just as the twister came spinning along.

For the past two months, Mr. Bibby has been working at the Essex station. At the construction camp near the station, there are approximately 25 men. They had just finished supper, and about 6.15 p.m. on Monday, June 17, they were in the bunkhouse when hailstones, the size of marbles, began to batter the roof of the wooden buildings. Mr. Bibby said that he had thrown off his boots and shirt and "had flopped on the bunk to read." "The boys," he told Hydro News, "called to me to look at the hailstones. Then I saw the twister. It looked for all the world like a funnel reaching up into the sky. I thought at first it was a fire. There was a lull and then the whole thing opened up and you could see portions of a house falling. All the time it was coming closer. I was without my shirt and boots and I had to stop and get them. By that time the boys had run for an open field. I could see I could not make it and so I made for the nearest cover—a pile of logs. The tornado struck as I got down and found myself in several inches of water. Then a piece of wood hit me across the back and shoulders, another piece with nails in it struck my head leaving only the rim and the peak of my cap. It was the cap that saved me from more severe head injuries. And the nails in a third board, that landed on one of my hands, were driven through part of the fingers."

Mr. Bibby also recalled his experience



NARROWLY ESCAPING having his scalp "lifted" by a flying nail-studded board when he sought protection from the Windsor tornado, William H. Bibby, (above) a carpenter with the H.E.P.C. construction department, is recovering from his unpleasant experiences. Mr. Bibby was working in a camp near the Essex Transformer Station when the "twister" appeared. There was a scramble for the open fields, but Mr. Bibby had only time to crouch beside a lumber pile where he received painful injuries.

at the Metropolitan Hospital where he stood for three hours waiting for attention. He told of the fine work done by one doctor and three nurses in handling men, women and children who had been injured and many of whom had broken limbs. There were other incidents which Mr. Bibby recalled. For instance, he remembers the sucking noise of the tornado and seeing seven railway box cars being lifted right off the tracks and tossed into a field. Some folk, he said, thought a war had started or that an atomic bomb had been dropped.

Mr. Bibby, who came to Canada many years ago, served his time as a carpenter in England where he was also a professional soccer player, having played for Blackburn Rovers and Swindon Town.

He is very emphatic about one thing. He doesn't want to meet up with another tornadol

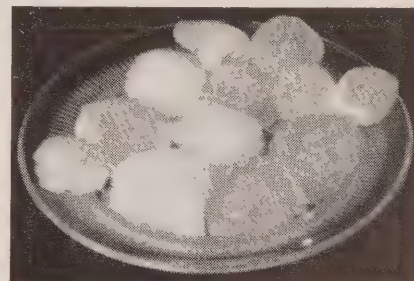
TORNADO IMPRESSIONS

(Continued from page 4)

repair truck to us and after rounding up a local photographer we set out for the Essex sub station where, bit by bit, we were able to piece together the story of what Hydro was doing to restore the service.

Contact had been made with St. Thomas early in the morning by calling from Detroit to Cleveland and then back to the Canadian side. Trucks could not navigate the highway, and that word navigate is used in its proper sense, so a plane took off from the airport and flew under the clouds along the trail of the power lines. The survey showed that three towers were down on one of the double lines just outside the city and at Prairie Siding eight more were down.

Crews had been brought in from London, St. Thomas, Delaware, Sarnia, Kingsville, Leamington, Amherstburg, Sandwich and any other place where they could be spared.



THIS IS definitely not a plate of cakes or candies. The fact is that they are a few of the hailstones which fell just before the tornado struck the Windsor area. Hydro News was informed that some of them were the size of oranges.

Plans had been made to hook up the two high tension lines by-passing the broken towers until such a time as new ones could be erected. Along this line there were two sets of wires running parallel and in the case of each break, only one set had been damaged.

At Walkerville Junction, the twister struck and hurled eight box cars from the siding into the ditch and adjacent field. The dynamic force of the tornado tossed some of the four-wheeled trucks over the right-of-way fence.

It was right here also that the telegraph and telephone lines were knocked askew

(Continued on page 34)

DOWN THROUGH THE YEARS

ELECTRICAL HISTORY

PART 5

By Herbert C. Powell

Last month's story covered electric batteries and the electric telegraph. This time the story deals with the electric generator (formerly called dynamo) and the first electric lights.

The operation of an electric generator is quite simple. It consists mainly of two parts: stationary, revolving. In small machines the electromagnets (magnetic field coils) are stationary; the revolving armature contains a set of coils of a number of turns of copper wire (conductors). In large generators it is just the opposite, the electromagnets revolve, and the coils of copper wires are stationary.

Some kind of power, as water, steam, gas, gasoline, is necessary to drive the revolving part.

Electricity is made by the simple process of wires passing through a magnetic field; the invisible magnetic lines of force are cut by the wire conductors, thereby inducing a current of electricity in the conductors.

Faraday, in 1831, was the first to dis-

cover the principles of the dynamo when he rotated a copper disc between the poles of a horseshoe magnet. He discovered a current of electricity in the disc as a result of the disc going through the magnetic field.

Pixie in 1832 introduced the principle of copper wires rotating through a magnetic field, and when he found the flow of electricity to be an alternating current as the wires revolved, he invented a commutator to which the wires were attached so that a direct current could be obtained.

Wheatstone in 1845 replaced the permanent magnets of a dynamo with electromagnets, but energized them by a current of electricity from an outside source. But in 1857 he found a method of supplying electricity to the magnets from its own machine; they were self-excited.

Shuttle Armature Developed

Siemens, in 1856, made a dynamo with copper wires wound on an armature somewhat similar to thread wound on a shuttle. It was called a shuttle armature. In 1871 Altenek, an associate of Siemens, arranged the wires on the surface of the armature as though they were wound on the outside of a drum. It was called a drum armature.

In 1860 Paccinoti built an armature in the form of a ring containing many turns of wire wound around it. This was called a ring armature.

In 1870 Gramme built a practical dynamo using an improved ring armature.

The earliest armature cores were solid iron which heated up rapidly caused by eddy currents circulating in the iron. This was overcome by using thin sheets of iron with insulation between sheets.

At the 1876 Exposition in Philadelphia, electrical apparatus was almost unknown. At this time only three dynamos were exhibited: one made by Gramme which operated one arc light; another made by Wallace which served one arc light and a small motor; and the third, an electroplating dynamo made by Weston. The only other pieces of electrical equipment shown were, Bell's model of a telephone, and some telegraph equipment.

But inventors were at work, and within

a short time a few had formed companies to manufacture their own inventions. By 1880 a number of companies were manufacturing electric lighting equipment and were trying to push ahead of one another, competition being keen.

Five Pioneer Inventors

We shall now look into the lives of five of the leading pioneer inventors who established manufacturing companies bearing their own names. The dates of birth and death are listed.

George Westinghouse	1846-1914	age 68
Thomas Edison	1847-1931	age 84
Charles Brush	1849-1929	age 80
Edward Weston	1850-1936	age 86
Elihu Thomson	1853-1937	age 84

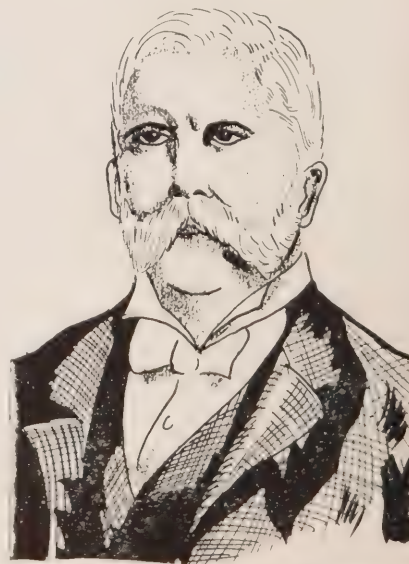
In Europe the Siemens brothers were pioneer inventors and manufacturers, particularly, Werner Siemens, 1816-1892 age 76.

George Westinghouse was born in 1846 near Schenectady, N.Y. The one hundredth anniversary of his birth is being celebrated this year, 1946.

In 1861 at age 15 he became an apprentice machinist in his father's shop in Schenectady where farm machinery was made. He spent considerable time reading, thinking, studying, experimenting, and his first invention was achieved at age 15—a rotary engine.



THOMAS A. EDISON



GEORGE WESTINGHOUSE

In 1863, at the age of 17, he enlisted in the army of the Civil War, later transferring to the navy, and returning to Schenectady in 1865.

In 1865, he attended Union College in Schenectady, but after three months he returned to his machines and inventions.

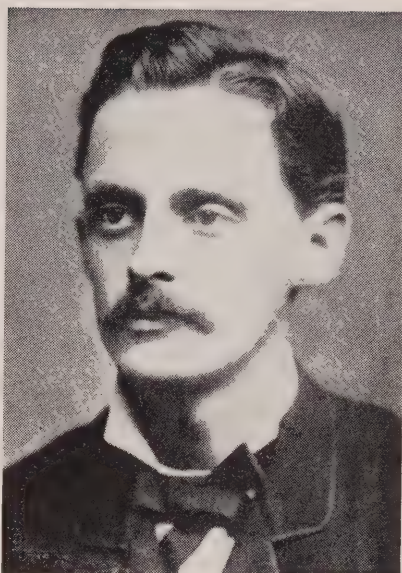
In 1865, at the age of 19, he saw a train wreck, saw the need of something to put cars back on the rails quickly, made a device for replacing derailed railway cars, obtained a patent on it, and made and sold the equipment.

Witnessed Train Wreck

In 1868, at the age of 22, he witnessed a train wreck when the hand brakes could not stop the two trains before they crashed headon. He saw the need of positive and powerful brakes. He read in a magazine about compressed air being used to build a railway tunnel through a mountain in Switzerland. From this idea, he worked out a complete air brake system for locomotives and cars, obtained the patents, formed the Westinghouse Air Brake Company, and started making air brakes in Pittsburg in 1869 at age 23. This type of brake is used on nearly all railroads.

Before George Westinghouse died in 1914 at age 68, he obtained over 300 patents, and pioneered in the manufacture of a great number of various things that had not been made before. He formed over sixty companies, and his name became known throughout the world for the highest standard of products.

The Canadian Westinghouse Com-



ELIHU THOMSON

pany Limited, started in Hamilton, Ontario, in 1896 fifty years ago, making air brakes. The growth has been so outstanding in many lines of equipment for power, light, heat, sound, cooking, refrigeration and radio, that now this company has over 5,700 employees on the payroll.

Followed Threefold Pattern

The threefold pattern which George Westinghouse followed in his work and inventions is a plan worthy of imitation by all young people:

1. Seeing a need immediately for a new device or method.
2. Meeting the need right now by some idea, process, or invention.
3. Arranging a business enterprise to quickly turn ideas into products, and to sell them.

Thomas A. Edison was born in 1847 in Ohio, one year after George Westinghouse. Edison's name is a household word and has been connected with many ideas and enterprises. About 1,100 patents have been granted to him, the largest known number for any one person. But we are to look at some of his electrical inventions. His first work was with the telegraph, then the telephone, followed by the electric incandescent lamp, the electric dynamo and the electric motor. He produced his first incandescent lamp in 1879, then he was compelled to devise a system of central generating stations and suitable distributing wires, cables, and equipment, both underground

and overhead, as well as in buildings.

Established Edison Electric Light Co.

He established the Edison Electric Light Company in New York City for the manufacture of his equipment. The first commercial steam central station was opened in New York City in September, 1882, and the first water power plant in October, 1882, in Appleton, Wisconsin. The heartaches, headaches, and discouragements were numerous, because he had to invent one new idea or device after another as he went along, because no one had done those things before. He had hundreds of failures before success.

Edison believed that his direct current system was far safer and better than an alternating current system, and his company fought all other competitors.

The reading of Edison's biography of his life gives you thrill after thrill as he met each problem and obstacle, as he worked days without food or sleep till he found something that would work. The three-wire distribution system in use now all over the world was invented by Edison. It would take a very long list to record even his most important inventions. He received many honours before he died in 1931 at the age of 84. For Edison's boyhood, see Electrical History, Part 1, Hydro News, March 1946, page 22.

Charles F. Brush was born in 1849 in Ohio. At school he was intensely interested in electricity. He graduated in mining engineering from University of Michigan at age 20, then a Master of Science Degree was followed by degree



CHARLES F. BRUSH



EDWARD WESTON

of Doctor of Philosophy. He designed and built a dynamo after the design of Gramme in 1876. He introduced the compound field winding to obtain constant voltage. His arc light generator and arc lights were exhibited in 1878. He invented many devices. In 1881 the Brush Electric Company was incorporated in Cleveland, Ohio, and continued until absorbed ten years later by the General Electric Company when the works were removed to Schenectady. He died June 15, 1929, age 80.

Trial Arc Lights

Brush was a real pioneer, having no precedents to follow. Much of the equipment that he made was imitated by others, and soon there was keen competition in arc lights. For example, in 1881 in Toronto there were five organizations had trial arc lights on King Street, but the city did not begin paying for lights until 1884.

Edward Weston, born 1850 in England, came to New York in 1870, age 20.

He studied the life and works of Michael Faraday from books in the City Library, and decided to follow science as a career. But his family decided to make him a doctor, and he was an apprentice to Dr. Coleman for three years, where he studied chemistry rather than the medical arts. He gave up the career of doctor in favor of science.

Upon arrival in New York he tried a job with a photographer with whom he studied the chemicals of photographic materials. Then he tackled a job in an electroplating shop where he succeeded in greatly improving the processes and chemicals of plating. Later on he built an electric dynamo to supply electricity for plating to supersede the large numbers of electric batteries which were used to provide the electric current.

Next, he made an arc light dynamo and arc lights, and formed a company to manufacture dynamos and other apparatus, all of which were quite successful. He produced incandescent lamps and

material from which the filaments were made, which material and processes of lamp making became standard among the lamp manufacturers. Even Edison's lamps were made from some of Weston's materials and methods.

Eventually in 1888, Edward Weston started making electrical instruments in his own organization, the Weston Electrical Instrument Company, which is still in the forefront of the instrument business.

In 1876 at the Philadelphia Exposition, Weston exhibited his dynamo for electroplating, the first of its kind in the United States.

Over 300 Patents Granted

Weston died in 1936, at age 86, after an extremely active and hard working life. Over 300 patents had been granted to him. He invented and made numerous first things which required extreme resourcefulness in devising new materials, machines, and methods for manufacturing the products. The list is a very long one. He tried to improve on all his products and as a result they were made to a very high standard of excellence.

Three universities honored Edward Weston with degrees of doctor—McGill, Stevens, Princeton.

Elihu Thomson, born in 1853 in England, came to Philadelphia in 1858, his father having lost his job as an engineer mechanic in Manchester when the great depression occurred in 1857. Elihu's parents trained him to see things and to inquire into the causes of action. His father took him to see factories, engines, machines, and nature in great variety. His mother skilfully trained him to



UP IN the attic of his home, Elihu Thomson (above) spent hours testing and developing insulating materials. Many of the principles he developed are still used to-day in modified forms.

THERE ARE times when a bottle can serve a useful purpose. For instance, Elihu Thomson, when a young man wound wire around a liquid container, as shown here, and by rotating it by hand between two permanent magnets, he managed to produce electricity.



ENTERPRISING ELMIRA

With a total of some thirty industries and approximately 2,300 inhabitants, Elmira, one of the youngest towns of Waterloo County, has gained the distinction of being one of the most highly industrialized communities for its size in the province. Hydro, which became available in this municipality in 1914, has done its part in serving and helping build up these industries whose products are marketed throughout the Dominion, as well as in various parts of the world.

Elmira's early history was similar to that of many other Ontario communities. The pioneers of the district came mostly from the British Isles and cleared the dense forests and verdant cedar swamps, built their log cabins and tilled patches of the soil, sufficient to yield grain for

their own use. They also killed game and fished in the streams which were reportedly teeming with trout.

One of the earliest settlers on record is a man named Bristow, who built the first house in the district about 1840. He also opened a general store and shoe shop and later extended his operations by erecting a tannery and potashery. He was the first postmaster and as a result the settlement became known as Bristow's Corners or West Woolwich.

Around 1850, several German families moved to this community. These people came mostly from Pennsylvania, and for this reason some of the early architecture shows an American influence. In 1853 the name was changed to Elmira, after the city of the same name in New York

State. A village charter was obtained in December, 1886, and it was incorporated as a town on January 1, 1923.

When Hydro came to this municipality, which is appropriately known as "Enterprising Elmira," the members of the first commission were: P. F. Stumpf, chairman; D. Hollinger, reeve; and I. Hilborn, commissioner. At that time the load was 83 horsepower. To-day, it is approximately 1,600 horsepower, distributed over eleven miles of distribution lines to serve 568 domestic, 126 commercial and 26 industrial consumers.

Since the inception of Hydro in this area there has been a steady reduction in the cost of service to consumers. Prior to Hydro the net cost was 11.4 cents per kilowatt-hour. In 1915, with an average domestic monthly consumption of 13 kilowatt-hours, the average cost was 7.5 cents per kilowatt-hour. At the present time the average monthly consumption

(Continued on next page)

THROUGH THE YEARS

(Continued from previous page)

understand and explain all he observed. She bought a book of experiments, "The Magician's Own Book" containing most of the scientific discoveries up to that time, and encouraged him to study and try them in his home-made laboratory. At school, he was so far in advance, his teacher let him teach the other pupils. One teacher, George Stuart took a great interest in him.

After he finished high school in 1870 at the age of 17, he was appointed assistant professor of chemistry. From 1876 to 1880 he was professor of chemistry at the high school he formerly attended, a colleague of Professor E. J. Houston, who was professor of natural philosophy and six years older.

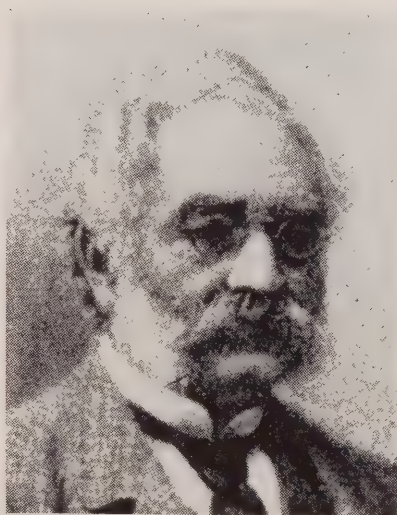
Invented Many Devices

Thomson invented many early electrical devices; a dynamo in 1873; an arc light dynamo, automatic regulator, arc lights, wires and switches. The basis of the successful arc light system made by his company, American Electric Company, 1880 to 1883; Thomson-Houston Company, 1883 to 1892; merged with Edison's company, Edison General Electric, Brush Electric Company, and other companies to become the General Electric Company.

He obtained over 700 patents in his life time, covering almost every part of electrical activity. He was honoured and decorated at home and abroad receiving fifteen or more medals and many degrees.

He left the problems of financing the

business to others. He moved his first plant from Philadelphia to New Britain, Connecticut, then to Lynn, Massachusetts.



E. W. VON SIEMENS

Charles A. Coffin, a shoe manufacturer of Lynn, came into the business in 1883 as manager when Thomson was age 29. Thomson had selected E. W. Rice, a former student of his, to act as superintendent of works so Thomson could give full time to designing and engineering. When the General Electric Company was formed in 1892 at Schenectady, Charles A. Coffin became president, and E. W. Rice, manager, while Thomson remained at Lynn in charge of the laboratory. Thomson had something to do with every important electrical development. He died in 1937, age 84.

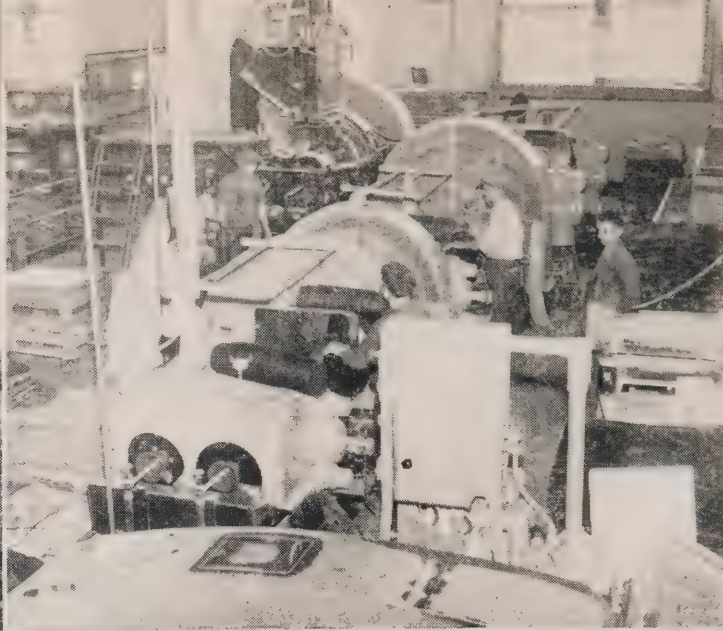
Developed Electroplating

Werner Siemens, 1816-1892, was the eldest of four brothers, all of whom were active in inventing. He founded the firm of Siemens and Halske in 1848 in Germany. His younger brother William (1823-1883) went to England in 1844, and founded the firm of Siemens and Company in England, and became a naturalized British subject in 1859. Werner Siemens developed a system of electroplating in 1842, and William went to England with the system which was adopted by Elkingtons. This is the earliest known electroplating on a commercial scale. It was not until 1867 that Werner Siemens built a dynamo for electroplating to take the place of batteries. About this same time two others, S. A. Varley and Charles Wheatstone, each built a dynamo.

In 1848 Werner Siemens laid the first electric telegraph in Germany. Much work was done in building steam engines, furnaces for steel, glass, telegraph apparatus, submarine cables, dynamos, electric lighting, electric railways, electric power plants and transmission systems. Werner invented the shuttle armature about 1856, and Alteneck, an associate, brought out the drum winding armature in 1871. Werner was honoured by his King, and William was knighted by Queen Victoria. They also received many honours from learned societies and universities.

Parents, boys and girls can learn many lessons from these men, all of whom performed some of their best inventive work before 21, and started in business before 30 years of age.

The History will be continued.



ELMIRA

IN THE top left hand picture is the Martin Feed Mills, which not only chops and prepares the feed and grain for market purposes, but stores it as well.

REPORTED TO be the largest felt shoe company (top right) in the British Empire, the Great West Felt Company Limited, manufactures its own felt and produces the shoes in this factory. The above process is hardening the fibre.

THE CENTRE illustration gives a general view of the Naugatuck Chemicals Division of the Dominion Rubber Company, which manufactures DDT insecticide and 2, 4-D weed killer.

ANOTHER FACTORY in this industrial town is the Elmira Shirt and Overall Company, shown in the lower picture.



tion of domestic consumers is 182 kilowatt-hours, and the average net cost per kilowatt-hour is 1.41 cents.

The financial affairs of the Elmira Public Utilities Commission have evidently been in good hands, for it is expected that the final debenture payment will be made in 1950.

In the beginning, this town, which is situated high on the southern and western banks of the river Canagagigue, was essentially agricultural, but since the turn of the century it has become an industrial centre, and although the majority of these factories started on a small scale, their progress has been steady.

One of the leading companies using low-cost Hydro power is the Naugatuck Chemicals Division of the Dominion Rubber Company, Limited, which was organized during the war for the production of analine oil and diphenylamine and organic chemicals. To-day the company



ELMIRA

MANY VISITORS, on approaching Elmira, have noted with keen interest the covered bridge at West Montrose. This historic landmark is believed to be one of the last of its kind in the Province of Ontario.

ELMIRA IS a place where the old world mingles with the new—where the streamlined automobile of today passes the spanking horses and quaint buggies of yesterday. Many horses and buggies, such as the one shown in this illustration, can be seen on the streets of Elmira, particularly on market days.

OSCAR GEISEL, left, operator and maintenance man, and Carl Detweiler, foreman, were just leaving the sub-station on their way home when the photographer snapped this one.



is providing ammunition for war against pests and weeds by manufacturing DDT insecticide and 2, 4-D weed killer. Incidentally, this is the only company in Canada making these products.

Another company, the Great West Felt Company Limited, which is reported to be the largest felt shoe company in the British Empire, is unique in that it manufactures in the same factory, its own felt from South African Cape wools right through to the finished product.

The Martin Feed Mills Limited has the distinction of not only chopping and preparing its feed and grain for market purposes, but also of providing storage for as many as ten carloads of the finished product, bagged and ready for shipment. The mill is conveniently located near the railway station.

Other leading companies benefiting from Hydro service are: Elmira Furniture Company Limited; Elmira Shirt and Overall Company Limited; Klinck Com-

(Continued on page 34)



LOG CABIN SITE OF 110 YEARS AGO BECOMES MODERN ELECTRIFIED FARM

By Grace J. Carter
Asst. Editor, Hydro News

Desmond, Ontario, is one of these delightful little country retreats city folk dream about, and Fred T. Bell and his wife and sons are the kind of sincere, friendly folk one would naturally expect to find in such a setting.

Long before Hydro News had the opportunity of meeting the Bells, we had heard about them and of the nice things they had to say about the job Hydro was doing on the farm. Then there were stories about the family being of United Empire Loyalist stock and about the farm being over a hundred years old.

All these things seemed to add up to a mighty interesting story which would be of interest to many Hydro News readers.

The first move was to contact Charles A. Walters, a man whose name has long been synonymous with Hydro in the Napanee district where the Bells are located.

Mr. Walters, himself, is a mighty busy man. Not only is he manager of the

Napanee Public Utilities Commission, but he is also superintendent of the Napanee rural operating area. Hydro transmission lines in this territory alone if placed along the railway tracks would extend almost as far as Montreal is from Toronto. To be exact there are 315 miles of line, serving approximately 1,800 consumers.

Back in 1905, Charlie, as Mr. Walters is known to his many friends, helped construct and install the municipal lighting plant at Napanee. Later, he became secretary and manager of the local utilities commission. When this plant was sold to the Seymour Power Electric Company in 1911, he was retained as manager. Eventually, in 1916, the property came under the jurisdiction of The Hydro-Electric Power Commission of Ontario, and Charlie Walters is still on the job.

It was Mr. Walters whose kindly co-operation made it possible for Hydro News to get some interesting impressions of the Napanee district and to meet the Bells whose post office address, by the way, is Moscow—Moscow, Ontario!

Mr. Bell, a well-built, clean-shaven man, has brown eyes and a pleasant, low

pitched voice. We thought he would look just fine in a uniform of the Coldstream Guards for he's got the height and bearing and looks youthful.

Farm In Family 110 Years

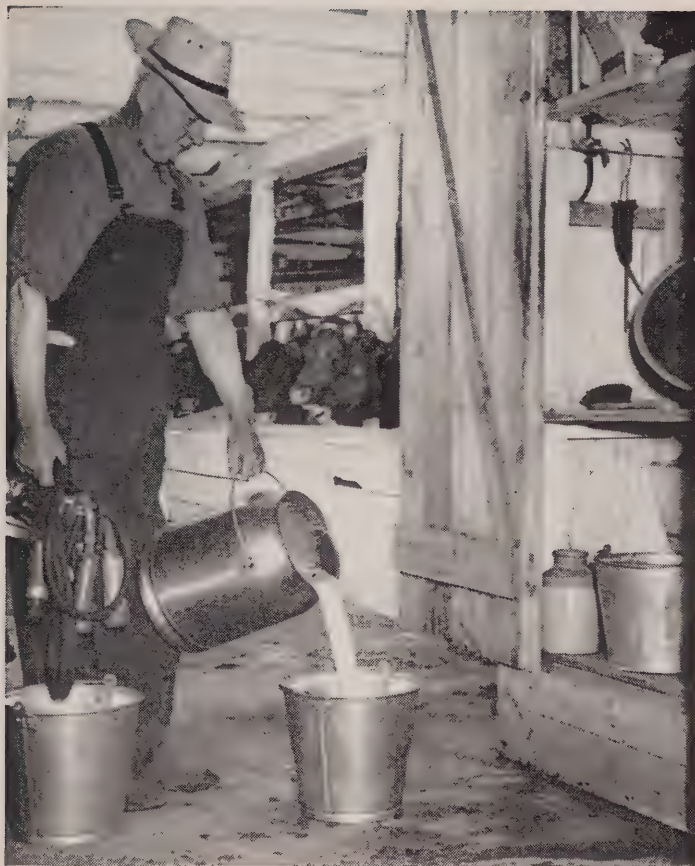
We were thrilled when we saw his farm, the well-kept lawns, flowers and that fine two-storey, red-brick house which seems to suggest home in its truest sense. There were so many things to see round the Bell farm which, we learned, had been in the possession of the family for 110 years. Hydro News started asking questions about the property at this point and we learned that Mr. Bell's great grandfather, Lt.-Col. Wm. Bell, was a United Empire Loyalist, who in 1836 was given a grant of land, by the Crown, of some 1,200 acres, but not all in one block. At the present time there are 500 acres in the Bell property located in the village of Desmond.

Before Daniel Fraser Bell could settle on this property in 1836 he had to clear the dense forest in order to build his

(Continued on page 20)

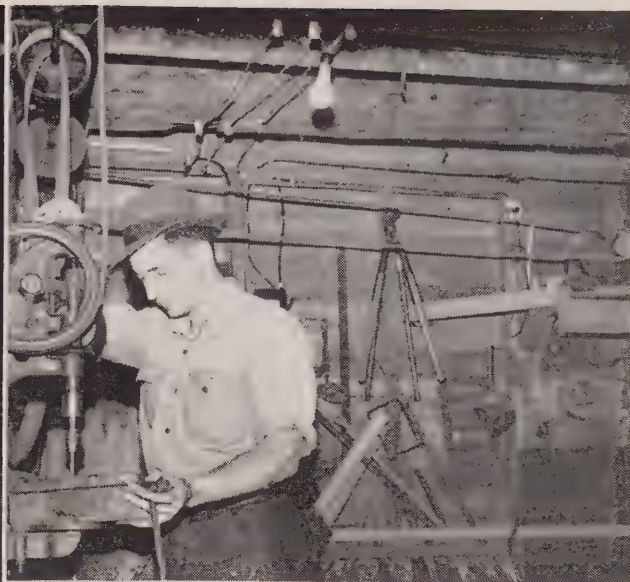
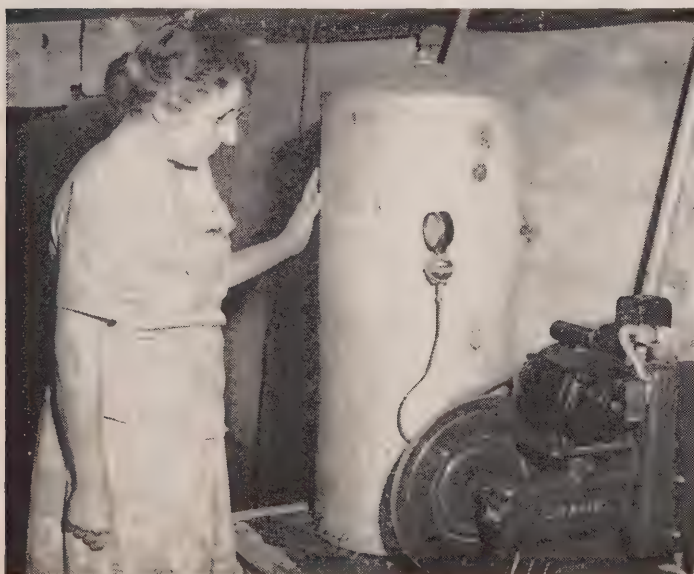


MR. AND Mrs. Bell outside their home. This is the third house that has been built on the Bell property. The first one, a log cabin, was built in 1836, which was replaced by a stone house in 1848, and in 1910 the above home was erected.



THIS ILLUSTRATION shows Mr. Bell using one of his milking machines. On his farm he has fifty head of cattle of which seventeen are milkers, and he claims that the electric milking machines are the handiest things on the farm.

MRS. BELL, lower left, is high in her praise of the electric pressure pump in the cellar, which pumps water for the household. She is shown here watching the gauge.



HOWARD BELL, above, recently out of the Armed Services, and second son of the Bell's, came over to use the electric drill press in his father's workshop. Howard runs the farm next door.



NORMAN BELL, above, who is the youngest son, helps his father look after the farm. As may be gathered from this shot, one of his chores is chopping wood.



THERE CAN be beauty in construction as evidenced by this shot of massive timbers which are braced and tied in to form the foundation for the stockpile aggregate conveyor which brings materials to the cement mixer. The horse on the left is used to haul timbers in place with a block and tackle.



EVEN THOUGH it does swing bridge is very safe side of the Madawaska river on a cement bridge which stream on



Stew

FIRST NEWS photographs of river where the Commission is proceeding with power development, are shown on the

The new plant, which, it is anticipated, will be completed in 1947, will have three units and a capacity of 10,000 horsepower.

The dam at this development, it is estimated, will be 475 feet above sea level, creating a lake 475 feet above sea level as far as Calabogie, which, in turn, is 475 feet above sea level.

Present plans provide for the establishment of a camp for the operating staff.

HYDKO NEWS climbed up a steep precipice in the face of an avalanche of small stones to get this picture of the Madawaska River. The foot-hills of the Laurentian mountains can be seen in the distance. Construction camp buildings are also shown.



REMINISCENT OF the old days on the Madawaska, is the sound of the saws and the warning cry of "timber" that echoes back from the hills, as Hydro clears trees, and operates its own lumber mill to help provide necessary wood required in constructing the new 81,000 horsepower plant.

and sway, this sectional
es the way" to the other
es can make the crossing
I about 500 yards down-
roadway.

Stewartville

at Stewartville on the Madawaska
h the construction of a \$10,000,000

ll be placed in service by the fall of
around 81,000 electrical horsepower.

will raise the water level by 150 feet,
will extend thirteen miles upstream
es from Barrett Chute.

of a permanent colony at this new

LOOKING DIRECTLY down on the power shovel, the camera caught this unusual picture showing the pattern formed by the great jaws as they bite into the earth. The cable running over the river carries compressed air piping to supply pneumatic drills.





THIS CHURCH in Desmond is very close to the Bell farm, and members of the family attend regularly.

LOG CABIN SITE

(Continued from page 16)

log cabin. Of necessity, the tilling of the soil started on a small scale because clearing the land took time and was hard work.

Many stories have been written of the hardships and privations endured by these early settlers, when only grim determination saw them through. In 1848 the cabin was replaced by a stone house which was used until 1910, when the present home was erected.

Hydro Installed In 1930

Since Mr. Bell installed Hydro in 1930, his chores have not only been considerably lightened, but he says it is now possible to do more work in a shorter time and thus increase productivity. It has also proved a great convenience and comfort in the home. "In fact", he said, "I just don't know what I would do without Hydro, and it is so cheap, too."

He went on to point out that on his first electric bill, which was mainly for lighting purposes, he used 144 kilowatt-hours at a cost of \$12.31, or an average cost of about 9 cents a kilowatt-hour. Today, with his numerous electrical aids which include nine motors, as well as household appliances, a recent bill showed a consumption of 1,210 kilowatt-hours at a net cost of \$18.10, or an average cost of approximately 1½ cents a kilowatt-hour. The explanation is simple, as so many other rural consumers throughout the province have found—the greater the use, the less it costs.

His first bill of 144 kilowatt-hours was computed on 112 kilowatt-hours at the first rate of 5 cents, and the remainder of 32 kilowatt-hours at the second rate of 2 cents, making a total of \$6.24. At that time there was a service charge which amounted to \$7.44. This made a

total of \$13.68, less 10 per cent prompt payment discount, resulting in a net bill of \$12.31.

Energy Rates Reduced

In keeping with Hydro policy, the energy rates have been progressively reduced. Now there are three energy rates but the service charge has been eliminated. His recent bill of 1,210 kilowatt-hours was computed at 180 kilowatt-hours at the first rate of 3.5 cents; 540 kilowatt-hours at the second rate of 1.6 cents, and the remainder of 490 kilowatt-hours at ¾ of a cent, making a net bill of \$18.10. Thus it may be seen, because of the low third rate, the greater the consumption, the less it costs.

The modern electrified Bell farm of today is a far cry from the log cabin days when smoky oil lamps were used; the nearest well was three-quarters of a mile away; cows were milked by hand; and when darkness began to fall, members of the family completing their day's chores, stumbled through the barns, stables and yard with lanterns that invariably went out at the most inopportune moment.

At the present time Mr. Bell, along with his wife, Grace, and youngest son, Norman, look after fifty head of cattle, of which seventeen are milkers, and about thirty pigs and eight hundred chickens—as well as raising crops of oats, barley and corn. According to their own story, they have found that the best and cheapest

farm hand that can be employed is Hydro power. They have also found that it pays to have adequate wiring for they now have, distributed throughout their buildings, seventy outlets located in the most convenient places.

Have Nine Electric Motors

Their nine electric motors provide energy for two milking machines (the handiest thing on the farm, according to the owner); a separator; a 63-foot well which pumps water to the poultry yard in the summer, and takes care of the drinking water for the cattle and horses; a pressure pump in the cellar to provide water for the household; a saw, drill and emery wheel in the workshop; power clippers; washing machine; refrigerator; vacuum cleaner—as well as the following appliances: an iron, toaster, heating pad, two-burner hot plate, hot water heater, an electro pail for heating water to wash dairy utensils, soldering iron, three chicken brooders, radio—and last but not least, Hydro provides adequate lighting for the home, as well as the farm buildings and yards.

The transition in the farmer's way of life can be traced directly to the power line that comes to his door, and with the steady reduction in rates, it is no longer considered a luxury, but in most cases a necessity. And it is expected that in the not too distant future more and more farmers will benefit, as Mr. Bell has done, from low cost Hydro power.



FRED T. BELL, left, and Charles Walters, superintendent, Napanee rural operating area, are seen comparing Mr. Bell's original Hydro bill with one of recent date. If their conversation could be heard, it would probably be a discussion on the fact that greater use means lower cost.

Dutton Impresses Visitor As Place Where Folk "All Pull Together"

By HARRY M. BLAKE,
Hydro News

In a setting of well-kept lawns and neatly trimmed shrubbery, the home of William (Bill) Hollingshead in Dutton looks out upon the flour mill which his father, Henry, established in 1886. Embedded in the lawn beside the walk is one of the original millstones of imported French burr which were first used to grind the grain that the farmers of the district brought to the mill. Millstones have changed, but the farmers have been bringing in their grain in increasing quantities.

The old Hollingshead mill—now enlarged and completely modernized—makes another bid for fame. Here was generated the first electricity used in Dutton and vicinity.

Some electric power had been produced in the mill through a steam plant as far back as the beginning of the century, and in 1903 it was decided to light up Dutton by this means. A joint stock company was formed, and the mill went to work at the job.

"People came from quite a distance to see the new lighting," Mr. Hollingshead told Hydro News. "It created quite a sensation. There was one old man who walked all the way in from Wallacetown. He sat down on a chair in the main street and just gaped and gaped at the lights. I remember him asking if the wires which carried the current were hollow, and when we explained to him that they weren't, he couldn't understand why they were not red 'with all that hot juice passing through.'"

As the years passed and the business of the mill expanded, it was found impossible to supply enough surplus power from this source for lighting the town, and the generation of electricity for this latter purpose was undertaken by Alexander Law, whose workshop, now converted into an automobile accessories and garage business, was the only other place equipped to carry on. Mr. Law continued to supply lighting services to Dutton until the advent of Hydro in 1915.

Before Hydro, it had been quite a struggle to produce electricity on an economical basis. All sorts of fuel were tried out at the Hollingshead mill in an endeavour to cut down costs.

"We even tried sawdust," laughed Mr. Hollingshead. "It was a great day for

both the mill and the town when Hydro came."

In 1939 the Hollingshead mill passed into the hands of J. E. Davies, who had had considerable experience in the grain and flour business in the West. "Passed" is the word most appropriate for the transaction involved, since the terms "bought" and "sold", with their suggestion of bickering and legal negotiations, just don't seem to exist in the Dutton vocabulary. Here business or property would seem to "pass" from one party or individual to another by a friendly man-to-man agreement which leaves no trace of rancour or even petty dissatisfaction. And so Mr. Davies is carrying on quite in the Dutton tradition just as if he were a favoured nephew to whom some indulgent uncle had bequeathed an estate. Naturally, with the years, there have been improvements at the mill. With the use of Hydro power, Mr. Hollingshead had stepped up the capacity to 150 barrels a day. Since the war-time restrictions on the use of power were removed, Mr. Davies has installed a 75 horsepower motor, and the per diem capacity of the mill has been increased to 185 barrels.

"We consume at the present time an average of 32,700 kilowatt hours a month," Mr. Davies told Hydro News, as he displayed a bill which he had just received.

This bill, itself, was an interesting document, as it graphically illustrated how the cost of Hydro power goes down with its increased use. Mr. Davies, of

course, using Hydro for all his mill needs, had got into the third block of energy, and his saving pro ratio for power used was very pronounced. Even if he had only got into the second block of energy with his consumption, it would have been very considerable.

Electricity, of course, is essential in the production of a modern newspaper, and Hydro power has meant a lot to "The Dutton Advance."

"Before Hydro came," said Bertram Smith, who together with H. C. Campbell, is now running the paper which was established by his father, M. S. Smith, in 1889, "we had a hand-turned press, and all our letter press was hand set. Hydro power enabled us to set up a modern press and a linotype. This equipment has saved us an immense amount of labour. 'The Advance' does a large amount of job printing, too. The machines used for this work are, of course, all operated by Hydro electricity."

After founding The Dutton Advance, Mr. Smith senior looked around for a colleague. He found one in J. D. Blue, a relative of John M. Blue, who at that time was working on the ancestral farm in Dunwich Township, unconscious of the approaching time when he would become engaged with Hydro by Sir Adam Beck himself. Mr. J. D. Blue was a public school principal, and was admirably qualified to associate with Mr. Smith in the running of the paper. In 1932 Bertram Smith took over from his father, and

(Continued on page 30)



DUTTON'S MAIN street contains several smart stores that would do credit to a much larger town. The demand for electrical appliances, especially refrigerators, has been very brisk in this south-western Ontario community, and at the time of the visit of Hydro News the electrical goods store was about the busiest place in the district, with orders waiting to be filled from a long list of Hydro consumers.

Enlisted By Beck 31 Years Ago, J. M. Blue Of Dutton Retires

By HARRY M. BLAKE,

Hydro News

"Sir Adam saw me standing there. I suppose he must have realized how interested I was for he said: 'Mr. Blue, do you think you could look after our Hydro station here in Dutton?' I told him I thought I should be able to manage it all right provided his engineers would give me a little instruction. Within a few hours I had on a pair of spurs and I was climbing a pole."

Thus, with a quiet naivety, seated in the little parlour of his home in Dutton, John Blue described his initiation into Hydro's service, while the portraits of pioneer ancestors smiled down upon him from the walls.

When Hydro Came to Dutton

That was nearly thirty-one years ago—when Hydro came to Dutton. To be quite definite, it was Monday, August 28, 1915. Since then, until his retirement this summer, Mr. Blue, as secretary-treasurer of the Dutton Committee of Council, has given much of his time—and that without stint—to Hydro. He has seen the power load grow from 33 horsepower in 1915 to 310 horsepower today; and he has witnessed a consumer increase from 128 to 315 subscribers. The equipment of the local flour mill, whose products are known throughout the length and breadth of Canada, is now all electrically driven, and power presses have long since replaced the old flat-bed hand presses at the plant of the local newspaper. Most of the homes in Dutton are equipped with electrical appliances that would be the envy of many city people, and in the community hall there is adequate power and lighting for pictures, theatricals and every other kind of entertainment.

"A Good Man For Dutton"

Mr. Blue is reticent about the part he has played in the carrying out of these improvements, but everywhere you go in and about this thriving little community you hear the same story: "J. M. Blue has been a good man for Dutton." This is farmer's language. Interpreted in

the hyperbole of the city, it conveys the highest praise.

As a matter of fact, this unassuming resident of one of our older country towns is typical of the pioneer farming stock which is generally regarded as the backbone of the province. No rolling stone, Mr. Blue has anchored in the district where his grandfather first settled in 1843. He, and others of his kind, through good fortune and bad, have stuck to their guns, and through sheer hard work and an immeasurable patience, have converted a forest wilderness into a smiling land of crops and tillage.

"My grandfather and his family," said Mr. Blue, in describing the "old days" to Hydro News, "came to this country when there were no railways and only a primitive and dis-jointed coaching service. The party followed the waterways from Ottawa to Kingston and up Lake Ontario to Port Stanley. The site of my grandfather's farm adjoined property upon which his sister and her husband had settled a few years before, but the roughest kind of bush trail led up from the lake, and there was only one acre cleared to begin with."

Plenty of Game

It was difficult to bring in provisions. For some time the produce from the farm, as it was cleared, was entirely consumed by the household. Fortunately, there was plenty of game. Wild turkeys abounded, and timber "roosts" were built by the settlers to attract them. Settling on the rails, the great birds were an easy target even for the clumsy muskets of the day, and they provided a welcome addition to the larder. Deer roamed the forest glades, while during the migration seasons the wild pigeons were so numerous as to darken the sky in their flight.

When the present Mr. Blue first saw the light of day, the pigeons were gone, the turkeys were becoming scarce and the deer less numerous. But the clearing had become a sizeable farm, and Mr. Blue spent most of his youth in working and improving it.

Not Much Money Around

"There wasn't much money around even then," smiled Mr. Blue, "but everybody worked and everybody helped each

other. We didn't really lack for anything."

Times changed. Although he didn't actually give up the ancestral farm in Dunwich Township, Mr. Blue came to Dutton. This was in 1909, and ever since he has been actively associated with the welfare and progress of that community.

The switch-over from the old lighting system in Dutton to Hydro power was probably about the smoothest in Hydro history. "The old lighting went off one day, and the new Hydro lighting came on the next," was Mr. Blue's succinct description of the change. "Sir Adam Beck just turned on the current for Dutton and lit the town up."

Train Stopped for Sir Adam

Sir Adam, it appears, was in a hurry to go places after this little ceremony. The through train over the Michigan Central from Detroit to Buffalo did not stop at Dutton. In fact, it was not scheduled to stop anywhere between Windsor and St. Thomas. The story still circulates that the first chairman of The Hydro-Electric Power Commission of Ontario, had his own man flag the train when the station agent refused. Mr. Blue wouldn't vouch for that, although he admitted, with a chuckle, that it "would be just like Sir Adam." Be that as it may, the train stopped and Sir Adam got aboard—to establish another precedent—this time, off the record—for Hydro.

Of Old Scottish Family

As Mr. Blue was chatting with Hydro News, his wife came to the doorway to remind him of the banquet that was being given that evening in his honour.

"My wife," said Mr. Blue, with a touch of pride, "was formerly Miss Margaret McColl. She, too, is of an old Scottish family, which settled in this district even before my grandfather."

And they have been back together to the Land of the Heather. Perhaps now, in the autumn of their years, they will go back again. If they do they will surely carry with them the good wishes of every man, woman and child in their community.

But is is unlikely they will stay. Mr. Blue is too good a Duttonite.



J. M. BLUE receives from the hands of his successor, Z. E. MacCallum, a short and long-wave reminder that his faithful services have not passed unappreciated. On the left, William Hollingshead, one of Dutton's leading business men, voices the sentiments of H.E.P.C. representatives, community-residents and neighbourhood farmers who attended the banquet given in Mr. Blue's honour.

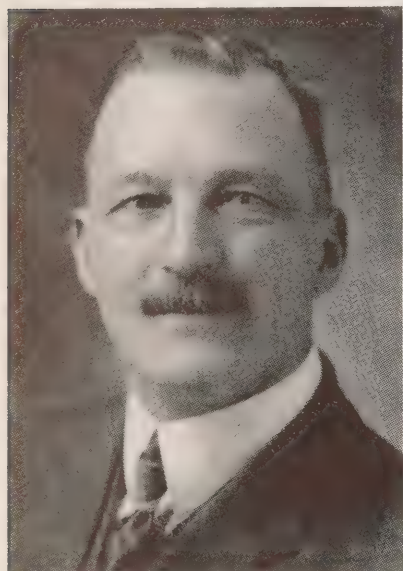
HONOURED FOR his long service with Hydro and for his unflinching advocacy of "good works" which have brought progress and prosperity to Dutton municipality and the surrounding country, J. M. Blue (right) is seen with his wife and old friend, William Hollingshead.

DURING THE banquet given to mark the retirement of J. M. Blue, secretary-treasurer of the Dutton Municipal Council, who has been actively associated with Hydro since its beginning in the district, Hydro News got this shot showing a section of the spacious auditorium in the Community Hall at Dutton. H.E.P.C. representatives from Toronto and many municipalities attended. The culinary and serving arrangements were in the capable hands of a group of Dutton ladies, Mrs. James Benne't looking after the menu.





CHAIRMAN AT ELMIRA



AMASA WINGER, chairman of the Elmira Public Utilities Commission, has been active in the musical life of the community for fifty years, having been identified with the church choir both as a vocalist and as its conductor. In his youth he attained a reputation in and beyond his native Elmira as a football player.

The fact that members of his family before him took an active interest in the public and business life of the community may have influenced Mr. Winger to "carry on."

His grandfather was postmaster sixty-five years ago and his father and uncle operated a woollen mill in Elmira about seventy years ago.

In addition to serving Hydro, Mr. Winger was a member of the town council from 1919 to 1921.

48 YEARS' SERVICE

WILLIAM SMITH HALLETT of the operating department of The Hydro-Electric Power Commission of Ontario at New Liskeard, has retired on pension. Commencing in the early days of the electrical industry as electrician for the town of Barrie, "Bill" was actively en-

gaged on the installation, maintenance and operating of electrical and steam power plants for over 48 years in various parts of the Dominion but particularly in the mining areas of Northern Ontario and Quebec. When The Hydro-Electric Power Commission of Ontario acquired the properties of the Northern Ontario Power Company in 1944, he was their plant superintendent, supervising the operating and maintenance of all the Canada Northern Power Corporation's plants in Ontario and Quebec. Since that time he has acted as district superintendent for the operating department's Timiskaming District properties.

ELMIRA SECRETARY

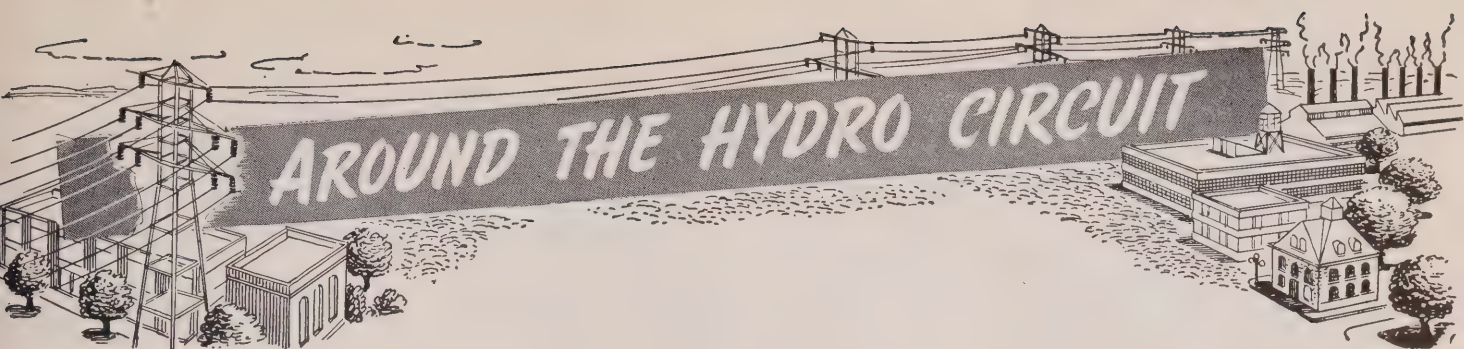


RUTH ELIZABETH EBY, secretary-treasurer of the Elmira Public Utilities Commission for the past two years, is a native of Elmira and received her education there, having attended public school, Elmira High School and Euler's Business College. During her leisure hours, Miss Eby spends her time bowling, sewing and tating.

ELMIRA COMMISSIONER



Born in Neustadt and educated in Elmira, **ALBERT SEILING**, who is serving his first year as commissioner on the Elmira Public Utilities Commission, has been actively engaged in the public life of the community having served on the town council for three years. Mr. Seiling, whose grandparents settled in Queen's Bush near Neustadt, recalled the difficulties of the early pioneers who, at times, had to carry flour on their backs from Guelph to Queen's Bush, a distance of approximately sixty miles. In Mr. Seiling's case, the breeding of pure bred cattle and dogs and managing a farm combine to make his life a very busy one.



MAYOR OF ELMIRA



DR. C. ELLSWORTH GIBSON, mayor of Elmira, who is serving his first year on the Elmira Public Utilities Commission, saw service in the first world war with the 10th Royal Grenadiers and later was transferred to the R.C.A.F. Dr. Gibson whose home is at Schomberg, Ontario, and who is a dentist by profession, has been a member of the advisory board of the Waterloo County branch of the Canadian National Institute for the Blind since it was formed. While attending the University of Toronto, he took a keen interest in sports and played rugby and hockey.

The more strenuous pastimes of the campus have now been replaced by lawn bowling and fishing in which Dr. Gibson finds relaxation during his leisure hours.

J. ALFRED CONE

Believed to have been the oldest active electrician in Canada, **J. ALFRED CONE**, managing director of The Pembroke Electric Light Company Ltd., Pembroke, Ontario, a native of Bristol, Quebec, died on June 18 in his 86th year. In 1887 he started working for the Pembroke Electric Light Company, which is reported to be

Canada's oldest commercial electric light undertaking, and in 1910 became its manager. In 1934 he was appointed a director and continued to take an active interest in the business until the day before he died.

Mr. Cone saw many changes in the industry. The company started generating electricity by using a dynamo connected by an exceptionally long leather belt across the small Muskrat River to a wheel which operated a grist-mill during the day and the lighting plant at night. When the demand called for greater capacity a steam generating plant was installed and later a larger hydro-electric plant was built under Mr. Cone's supervision at Waltham, Quebec. Since then this plant has been successively enlarged and modernized.

ANOTHER BUSY MAN



ALVIN BRUBACHER, a member of the Elmira Public Utilities Commission since 1944, when asked about his hobbies gave this answer: "Too busy selling groceries and pulling ration coupons to have hobbies." However, in addition to carrying on the store, which was the first exclusive grocery to be opened in Elmira 55 years ago by his father, Mr. Brubacher, who is a native of Elmira, has found time to serve on the Elmira Board of Trade of which he was president from 1936 to 1941, while he has been a member on the local high school board for three years.

ELMIRA MANAGER



ABRAHAM MARTIN BOWMAN, has been superintendent and manager of the Elmira Public Utilities Commission for the past twenty-eight years. Born in Woolwich Township, Waterloo, he received his early education in the district, and later he completed a correspondence course.

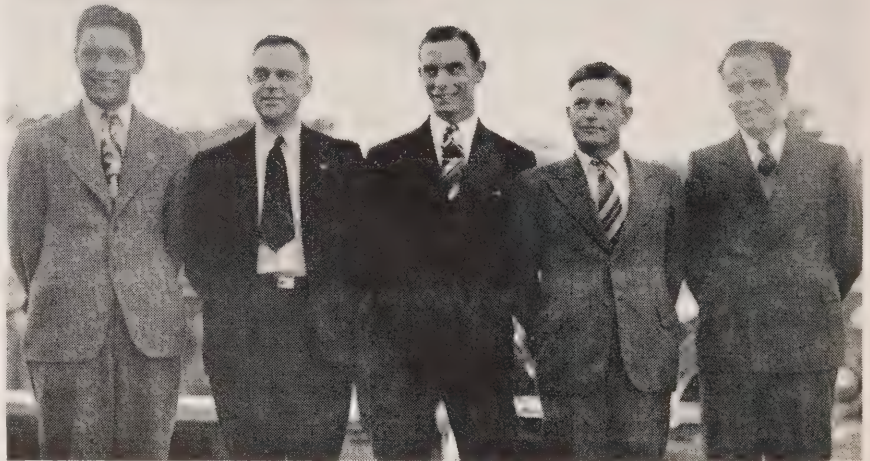
Mr. Bowman is both an electrical and a civil engineer and is a member of the Association of Professional Engineers. He has also won the distinguished service award of the Canadian branch of the American Waterworks Association.

In his leisure hours, Mr. Bowman enjoys working in his garden, and during the winter months he turns to cabinet making. He likes to recall that his grandparents pioneered in this area, having immigrated from Allegheny Valley, Pennsylvania.



"JUST SEEMS like yesterday since we started" was the general sentiment expressed by these five men, who retired recently, in recalling their many years of pleasant association with Hydro. They are L. C. Richardson, Belleville, Dave Nugent, Oshawa; E. C. Roberts, Campbellford; J. G. Searles, Oshawa, and A. S. Dafoe, Belleville.

THIS QUINTETTE comprising E. F. Sutton, H. A. MacDonald, K. R. Sutton, Adam B. Yearwood and Charles H. Collard, are the men who were awarded certificates crediting them with having saved the life of Alan Taylor, who was rescued from the Trent River at Lock 12. Both of these pictures were taken by Larry Roy of the Belleville Hydro office.



DOUBLE EVENT OBSERVED AT HYDRO "GET-TOGETHER"

Five men who are retiring from the employ of The Hydro-Electric Power Commission of Ontario after compiling a combined total of nearly 130 years' service, and another quintette who were cited for life-saving were feted at Campbellford on June 6. It was the first get-together since the war for Hydro men of the Eastern Ontario Division.

Leonard G. Dandeno, supervisor of the Belleville operating district, as chairman, introduced the retiring employees. They were L. C. Richardson, Belleville; Dave Nugent, Oshawa; E. C. Roberts, Campbellford; J. G. Searles, Oshawa, and A. S. Dafoe, Belleville. W. H. (Bill) Gerrie, assistant supervisor presented gifts which "would remind them from time-to-time

of their many years of happy Hydro association."

A special guest was Arthur MacDonald who, while not a Hydro employee, had worked as a gateman on the Trent for the department of transport. Mr. Dandeno explained that "Art" had worked in such close liaison with Hydro men that he seemed just like "one of our boys," and so he had been invited to attend.

Jack MacLellan of the Commission's employee relations department, who on this occasion was representing the National Safety Council presented the President's Medal to the operating and line maintenance personnel of the Eastern Ontario division. Along with this medal, which will be hung in one of the local

offices, certificates were presented to K. R. Sutton, E. F. Sutton, C. H. Collard, A. B. Yearwood and H. A. MacDonald. Mr. MacLellan pointed out how these men had performed resuscitation after Allan Taylor of Campbellford had recovered Donald Douglas from the Trent river at lock 12. Mr. MacLellan reported that the resuscitation was carried on for 40 minutes before the victim recovered.

The spirit of the Hydro family was carried a step further at this time than these social evenings usually go when one of the crews from the district provided a goodly portion of the entertainment. Dressed in hard-time and hill-billy outfits, a première in unusual music was presented to an eager audience. Master Dennis Hopping, who intends to be a line-man some day just like his "Pop," was also on hand to lisp out a couple of choruses of "Chickery Chick."



Wonderful days for reading in the hammock! And just the time to read and get ideas that may be useful when you have to get up and "go to it."

* * * *

When you clean a bunch of celery, don't break off the stalks one by one, and clean. Rather, cut off the root far enough up on the bunch to loosen all the stalks at one time. Then clean.

* * * *

Egg whites beat up better when they are at room temperature. However, eggs separate more easily as soon as they are taken from refrigerator. Always let egg whites stand before beating. Beat whites first, then the yolks—without washing beater.

* * * *

Wash an egg beater immediately after using. Twirl in cold water.

* * * *

Your egg slicer will slice cooked vegetables such as beets in a jiffy.

* * * *

Tack to the back of your cupboard door such basic recipes as those for biscuits, piecrust and white sauce.

* * * *

Pickles will remain bright green if you put a few clean copper pennies in the bottom of your preserving kettle—a good tip from the Hydro Night Supervisor. (You can use the pennies afterwards.)

* * * *

If shortening has to be melted for use in a recipe, melt it in a metal measuring cup. Saves waste of fat and dishwashing.

* * * *

The clever cook in the Accounting Dept. always dips cup or spoon into scalding water just before she measures molasses.

* * * *

Olives are less apt to spoil in the refrigerator if the jar cap is left off—the pickle solution becomes stronger.

Canned Blueberries: Pick over, wash and drain blueberries. Place in large kettle with just enough water to cover the bottom of the kettle (about $\frac{1}{2}$ cup water to 3 cups berries). Add sugar in proportion of $\frac{1}{2}$ cup sugar to 3 cups berries. Simmer until berries are soft, then add 1 tbsp. lemon juice for each cup of sugar used. Fill sterilized jars, partially seal and process in a hot-water bath for 5 minutes, timing from when the water begins to boil. Remove jars and seal tightly at once.

* * * *

Cucumber Sauce: Beat $\frac{1}{2}$ cup cream. Add salt, paprika, cayenne, then add 3 tbsps. vinegar slowly. Wash, peel and chop one medium-sized cucumber and enough onion juice to flavour delicately. Serve with cold meat.

* * * *

The paraffin layer on jelly or jam is easily removed if a milk bottle cap is placed in the paraffin while hardening—makes ideal jam jar lid.

* * * *

A Woman's Purse: Changing ensembles during the summer necessitates keeping your house key, money and lipstick in a special place. Well! Put these in a coin purse. Use a hat elastic (with "spear" ends) and insert one end of the elastic in the corner of the coin bag and the other in your pocket.

* * * *

Soap Patches: A bar of soap leaves a mark on the floor as you clean. A wire soap dish (the type used on bath tubs) makes a handy holder when attached to the side of a scrub pail.

* * * *

Pin-On Buttons: Buy dress buttons with a knob underneath the button in order that a safety pin can hold the buttons on. These buttons are easily removed before washing.

Packaged Bridge Table: A new metal portable compact package is transformed into a card table which unfolds in thirty seconds—the seats come down as the legs are pulled down. Likewise, when the table is folded to put away, each of the four seats folds down along with each leg by one motion. Then the table folds into a triangle and is easily transported by a handle at the apex.

* * * *

Our first objective today is to assist many countries in meeting their food needs. Imagination and a cheerful attitude to substitute bread and meat wherever possible will help very much.

* * * *

Pastel coloured gloves will continue to be in vogue. The new ones will be suede. They will be long and will be perfumed.

* * * *

Eatable birthday greetings were sent to Genevieve this week. The message was spelled on the card with the alphabet soup-noodles and tinted with vegetable colouring. A petite floral design was also formed across the front of the folded card. Very pretty!

* * * *

When the big dahlias begin to bloom I wax the small tin waste basket and place the big stalks in it. If the floral arrangement is placed in the breeze on the living room floor it will not topple over.

* * * *

Shoe polish applicator: I find that my old powder puffs make excellent shoe-polish applicators. Wash and dry them first.

* * * *

Into the new home freezing unit we have put three varieties of raspberries (in spite of the price of berries). We will tell more about them later.

* * * *

Tart flavour is the essence of the new fruit products which mixed with ice water makes a refreshing drink.

Lighter Lines



"Oh, Herbert, Dear! OUR song!"

There is reported to be a kennel near Toronto that sells Dachshunds. A sign outside reads: "Git a long little doggie."

The Pullman passenger poked his head out between the curtains and said: "Porter, what about my shoes? You've given me one black shoe and one tan." To which the porter replied: "Well sah, if that don't beat all! Dis is de second time dats happened dis mawnin."



"Reynolds! Wipe that opinion off your face!"

It was Mark Twain who spoke the final words of wisdom on the subject of summer holidays: "There is only one better way of spending them than lying under a tree with a book, and that is lying under a tree without a book."

In a certain Scottish community in Ontario there is a golf course, we understand, that has a sign that reads: "Members will kindly refrain from picking up lost golf balls until they have stopped rolling."

Edgar Bergen was telling Charlie McCarthy some of the wonders of the solar system: "Light from the sun travels at the rate of 186,000 miles a second, Charlie, isn't that a remarkable speed?" "Oh I don't know," said Charlie, "it's down hill all the way."

A budget is a plan for worrying before you spend instead of afterward.

The pretty teacher was instructing the grammar class in the conjugation of the verb "To love." "Willie," she said, "please tell me what it is when I say I love, you love, he loves —?"

"That" said Willie, who had seen too many movies, "is one of them triangles where somebody gets shot."

The spinster laughed when someone suggested that she should have a husband. "I have a dog that growls, a parrot that swears, a fireplace that smokes and a cat that stays out all night: why should I need a husband?"

One of the guests at a negro wedding approached a man who was very dressed up. "Pardon suh," he said, "but is you de groom?" "No suh, I ain't," the man replied with a sorrowing look, "I was eliminated in the semi-finals."

The most efficient water power in the world — women's tears.



"Sure he's a drip—but look what he drips with!"

"If you're looking for my husband he's gone fishing, just walk down to the dock and look for a pole with a worm on each end."

You have to work hard if you want to make a living, but if you want to get rich you have to attack the problem from an entirely different angle.



"Certainly I'm a responsible man—Wherever I've worked, if anything went wrong they told me I was responsible!"

#his and #hat

By The Editor

SO FAR as Windsor is concerned, "Courtesy" and "Co-operation" are something more than two words which are listed in the dictionary under the letter "C." Working on the assumption that deeds speak louder than words, the merchants, industries, department stores and other organizations along with the Windsor Public Utilities Commission have united in a community-wide courtesy campaign. This campaign is featured by a display of symbolic seals in the centre of which are inscribed the words: "Make it a Windsor habit," and pointed up by the theme which is expressed in the following quotation:

"The jewelled pivot on which our lives must turn is the realization that every person we meet during the day is a dignified human soul."

Those who are responsible for this campaign are to be commended. By fostering the idea of courtesy and co-operation, they are rendering a service not only to the individuals of their community and to the community itself, but they are focusing attention upon two human attributes which are vital in both national and international relations. It is an example which could be followed with advantage by other progressive communities. Incidentally, this column will be happy to hear from any communities which are promoting campaigns of this character.

WE RECEIVED a very interesting booklet the other day from Mary Ainsley of the Ontario Tourist and Publicity Bureau at Queen's Park. Bearing the title "Ontario, The Heart of the New World," this booklet contains some very enlightening facts. For instance, most of us are aware that Ontario covers a good deal of territory but very few, we imagine, actually know just how big this province really is. We found that when one travels from the east boundary to

the west boundary of this province, he covers a distance equal to that between Vienna in Austria and the west coast of Ireland. Looking at it another way, there would be room in Ontario for three countries with the area of the British Isles—in fact there would still be 48,547 square miles to spare after making room for these countries—which would indicate that this really IS a sizable province. To be exact it covers an area of 412,582 square miles. There should be lots of choice lots available for future home builders and, of course, there are all the advantages assured by an abundant supply of water power which provides low-cost Hydro power for home, factory and farm. (Note: We have just completed our review of the booklet and have decided that we are going to remain in Ontario!)

A PRESS release tells us that Canadians are becoming increasingly colour conscious and that correct colouring and lighting in factory, office, school and home are showing amazing results in increased efficiency. In Britain, a country that was colour-starved and light-starved during the war years, an all-out effort is being made to brighten up living and working conditions. The experiment of a North England cotton mill in painting its looms in lime green and light gold has received widespread attention and favourable comment. On top of that, the British Colour Council has announced that, in co-operation with the Ministry of Labour, it is preparing a booklet which is designed to stimulate colour harmony and correct lighting in factories throughout the country. While on this subject, it is of more than passing interest to note a report of the Miami Kiwanis Club which brands as "criminal neglect" indifference to proper sight conditions in school rooms. This report also notes a record of two-thirds less failures among students in school rooms which are properly painted and lighted. In Ontario,

there has been ample evidence of the increasing appreciation of the importance of good illumination. Interiors of many factories, offices, schools and homes reflect this trend. That Hydro has been able to make an important contribution to this trend is indicated by the number of the requests received by George Cousins, the Commission lighting engineer, for expert advice and plans to meet specific conditions.

WE LEARNED with regret of the illness of G. M. B. Lumgair of the Commission's accounting department. During his leisure hours, Mr. Lumgair finds considerable pleasure in writing verse and a number of his pieces have found their way into this column. We have in our file four verses written by this Hydro bard at the time of the recent Iris Show and dedicated to the "Queen of the Show." These verses follow:

*An Iris on her throne of glass,
And all-a-twitter — lovely lass!
Sighed to her rivals — "This must mean
The judge has made me the Queen!"*

*Go — tell my sisters what was said
When he pinned on this ribbon red.
'Tis sad that I may nevermore
Join in their revels as of yore.*

*The Robin's song no more to hear,
The Sun's soft kiss, I held so dear,
The Wind's caress — no more to know,
A Queen to reign — much must forego!*

*Ho Heralds! let your trumpets sound.
A Fairy Prince must now be found;
A Fairy Prince my throne to share.
My subjects will expect an Heir!*



DUTTON'S LOCAL Hydro problems are looked after by a committee of council. On the occasion of the ceremonies attending the retirement, of J. M. Blue the secretary-treasurer, the members of the council posed for this photograph (top) for *Hydro News*. Front row (left to right)—G. R. Braddon, D. W. Ford, councillors; J. M. Blue, secretary-treasurer, and V. S. Tripp, reeve. Back row (left to right) Colin McPhail, R. E. Trothen, councillors; Z. E. MacCallum, clerk; and W. H. Hull, superintendent.

IT WAS a great day when electricity generated in this flour mill (right), first lighted the streets and homes of Dutton. It was a still greater day, for the mill as well as for this progressive community, when Hydro took over in 1915. One of the most enthusiastic supporters of Hydro is J. E. Davis, who acquired the mill from William Hollingshead.



DUTTON IMPRESSES

(Continued from page 21)

was joined in the same year by Mr. Campbell. A 13-year-old lad, George Hall, assists them on press days.

"The Dutton Advance" has a very considerable circulation in the surrounding rural districts as well as in Dutton. It is up-to-date in every particular and thoroughly covers every field of local news. Hydro power is, of course, an important factor in helping it to carry on at high efficiency with so small a staff.

A walk down Dutton's main street suggests that there is a good deal of unostentatious enterprise in this seemingly quiet town. In a household furnishing store there was an attractive display of merchandise, and in the window of another shop there was a display of electrical appliances that would have done credit to a city emporium. And Dutton and the country districts surrounding must be electrically-minded, since inquiries elicited the information that much of the equipment shown was already bespoken, and that, in the case of some of the appliances, there was a waiting list "as long as your arm."

Today, there is ample evidence of progressive enterprise in Dutton and the surrounding country while the old co-operative spirit which brought such excellent results would seem to be much the same

IN THE seclusion of his garden—if he stays there—J. M. Blue (centre) retiring secretary-treasurer of Dutton Hydro-Electric System, will now have an opportunity to contemplate a long life of faithful service to the community.



CHAPTER V.—GREEK AND ROMAN LAMPS

By Mildred C. Redmond, Hydro News

The halls of the early Greeks, like those of the Anglo-Saxons, were lit by torches either held by slaves or stuck into the walls. As their civilization developed the Greeks discovered the use of the oil lamp and soon it replaced the torch for all ordinary lighting purposes. This change-over from the torch to the lamp has an interesting parallel in Greek mythology. In an early story Demeter carries a torch when she goes to the underworld to search for her daughter. But in the later myth of Cupid and Psyche, it is an oil lamp that Psyche holds up to get a good look at the face of her sleeping husband and it is hot oil from the lamp that drops on him and, to her misfortune, wakens him.

The Greek lamp, unlike the Phoenician, did not go back to the sea shell for origin but, probably, was a further development of the simple round saucer lamp and came from Egypt via Crete. Incidentally, a curious fact is that our word lamp comes from the Greek word "lampas" meaning torch.

The lamp proper began its history in the 6th century, B.C., and almost at once the scientific-minded Greeks got to work to improve it. They took the simple, round saucer and first of all curved the rim in instead of out to keep the oil from spilling so easily. Next, they put the nozzle in one side for the wick and gradually this nozzle was bridged over to keep the wick from slipping back into the oil. This led to a general covering-in process and later Greek lamps and Roman lamps were closed in altogether. They were mostly made on a potter's wheel and then covered with a slip or glaze.

By the second century lamps were

made by the newer method of moulding and this made it easy to put a decoration in relief on the top. Conventional designs were used or scenes from mythology.

Burned For A Year

For their finest temples and public buildings the Greeks made lamps of correspondingly fine workmanship and beautiful decoration, although on the same principle as far as the actual light was

concerned. One lamp that has been described in detail hung in the Erechtheum on the Acropolis at Athens. It was made about 400 B.C. and was the work of the sculptor Callimachus. When once filled with oil and lit, it burned for a whole year, which gives an idea of the size of the lamp. The wick was of fine flax and the fuel, olive oil. Above the lamp, a palm tree of bronze rose to the roof for the purpose of carrying off fumes, so it was said, although just how this worked is not quite clear. The lamp was filled ceremoniously on the same day each year.

The Romans copied the lamp from the Greeks, as they did so much else, and the evolution of their design followed along much the same pattern as the Greek. The earlier lamps had a pinched part of the rim to support the wick, which gradually became a nozzle, the rim was turned in and soon the whole lamp was closed in and the top actually became concave rather than convex or flat, to make it easier to fill. They were made by moulding in two pieces and then fastened together. The relief decoration was often elaborate, sometimes there was a handle to carry it or a ring for a chain or rope so it could be hung. The fuel was also olive oil and the wick of vegetable fibre from the plant verbascum or sometimes of tow or papyrus and was trimmed with a pair of tweezers.

Anyone who has experimented with a lamp of this kind will testify that they must have needed almost constant attention. The common lamp was carried by hand or stood in niches in the walls or on brackets or stands. Larger lamps were suspended by chains. Recently, a shop, practically intact, was unearthed in Herculaneum; from the centre of the ceiling was hanging a large bronze lamp. Although a certain number were made of

(Continued on page 33)



PSYCHE in the Greek legend carries an oil lamp like the one shown, in order to get a look at the face of her sleeping husband. A drop of the hot oils falls on Cupid and awakens him.



ROMAN CITIZENS used the small clay or metal lamps in their own villas but on festive occasions like the one pictured here, they lit brilliant torches to give more light.

THIS GROUP of Greek lamps (below) ranging from the 6th to the 1st centuries, B.C., illustrates the evolution of the oil lamp from its earliest form. Starting at the upper left with the simple clay saucer, it shows how the design was slowly improved, the rim being drawn in to prevent oil spilling over and the pinched part elongated into a nozzle to keep the burning wick well up out of the oil. It will be noted how the hole for pouring in the oil has been made smaller and smaller and more attention given to artistic design and decoration. The pierced shoulder of the later lamps was for string by which the lamp could be hung when not in use.





SHOWN HERE receiving replicas of the Canadian Electrical Association's resuscitation award from Wills Maclachlan, who was acting on behalf of the president of the association, are W. A. Salisbury, G. H. Jones, Sam Huston, F. A. Grimes and A. W. Hollingshead. The presentation took place at the Linemen's Training School, Royal York Road, Toronto, recently. Mr. Maclachlan recalled how on January 3, these men had successfully resuscitated George Bruce Woodhouse at Bolton, Ontario.

TAKEN IN the classroom of the Linemen's Training School, this "shot" shows members of the 22nd. class who were present when the resuscitation awards were made. Included in the group along with instructors and Hydro officials are: Ab. Willick, Bothwell; Fred Warner, Richmond Hill; Jim Graham, Toronto; Carl Banting, London; Jack Foster, Norwich; Gerald Keller, Madoc; Hugh Lennox, Hamilton; Arnold Kripps, Hanover; J. A. Walker, Markdale; Jack Stevenson, Brantford; and Lloyd Purchase, of Alliston.



WHEN DAY IS DONE

(Continued from page 31)

metal, the majority were of pottery and had a wide variety of decoration. Sometimes, a verse was inscribed on top, a gift to a friend or a thank-you verse to a host or hostess. Or there were scenes either from every-day life in Rome or from mythology. Very often, they liked to make the lamps in odd shapes, some being in the shapes of animals or birds or parts of the human body. Generally, they had a trade mark on the bottom denoting the maker or factory that turned them out. Sometimes, to get more light, lamps were made with several nozzles; they have been found with as many as fourteen burners. Different types of clay and glazes were tried, depending on the district and often with very decorative and attractive results.

But even at best, the light in the

Roman villas and public buildings must have been dim and smoky. Practical-minded as the Romans were and ingenious in their inventions of hot water heating, good plumbing and other devices that we like to think are strictly modern, they didn't make any real improvement on the plain oil lamp with its guttering flame. It must have been quite a task merely to keep them supplied with oil. Apparently, the average lamp would burn only long enough to get the family through dinner without refuelling, about one hour. With this in mind it gives point to the story of the wise and foolish virgins; anyone who went to an evening party without a generous refill would be asking for trouble.

One of the most interesting points about the Roman lamp is that the story of its development is a condensation of the whole history of the rise and fall of the Roman Empire. At the beginning, the lamp is made in a primitive design

of rough clay. Gradually, there are improvements added, the workmanship improves, the materials are finer and the design and decoration become more artistic. The best period is reached in the first century B.C. and the first three centuries A.D. and here the Roman lamp is at its finest, with exquisite workmanship, very elaborate designs and decoration and the finest clays and bronzes. After the third century there is a noticeable decline and, between then and the seventh century, the lamp deteriorates until it comes in a complete circle back again to the primitive clay lamp, carelessly made with a hole instead of a nozzle and no decoration. It follows, in short, the history of Rome itself, from the simple beginning, through tremendous expansion and development to the wealth and grandeur of Imperial Rome and then to the slow decline ending in decay and disintegration. So is the story of this proud Empire written in clay.

TORNADO IMPRESSIONS

(Continued from page 9)

by the force of the storm and wires were tangled together in places as if plaited by some giant hand.

Scouts On The Job

While the switching on the high tension lines was being completed we drove out to Walker Road where other crews were patching up the 26,000-volt lines. The street was closed to traffic but the Hydro truck was our pass to all prohibited areas. In one ditch we saw a derrick hoisting out a pole transformer whose original location, the foreman on the job told us, they could not immediately determine.

Boy Scouts were out in uniform doing a wonderful job of guarding against vandalism. Another job they had was to warn home-owners of the danger of falling buildings. Two of the more playful lads were trying to get a tune out of a piano that looked rather incongruous as it sat in the middle of the road.

Picked Up Like Toys

Perhaps the force of the tornado was most forcefully demonstrated by what it could do to a truck or a car. We saw several that had been picked up like toys after the wrapper of a garage had been pulled off. Then the cars would be tossed playfully hundreds of yards away where they would never land right-side-up.

Then there was the tractor that had been lifted from a concrete barn by way of the roof to be left standing against a bath tub in the middle of a field.

From the Commission's lab in Toronto came the big testing truck, a four-wheeled drive military type vehicle, which, while it was lending its aid to provide auxiliary lighting, got so completely mired that a double wynch was required to pull it out of the mud. Some mathematically-minded engineer on the job told us that there was around 40,000-pounds pressure on the wynch when it hauled it out.

When Lights Went On

Finally the switch over was made and the signal for preliminary tests was given. We were driving back to the sub station when the lights went on and somehow this seemed to have an effect on the people who were walking aimlessly along the street. It was almost as if they were saying "things will be alright now, the lights are on."

FINE TRIBUTE PAID TO HYDRO TRAINEES

Written by Ivan Lavery and published recently in the Woodbridge Advertiser under the head "Hydro Group Offers High Citizenship For Ontario Centres," the following news story speaks eloquently for itself.—The Editor.

PALGRAVE.—Lucky, indeed, will be those communities to receive as citizens members of the Hydro training group disbanding last week-end after a five-week stay here. Their highly competent and genial instructor was Clarence Wilby of Delta, near Brockville, with the Hydro since 1928. The group of eight men, as part of their field training, completed considerable power line construction bringing all the conveniences of electricity to numerous district farms in Lockton, Nobleton and Woodbridge areas.

Not only for this will they be remembered. The eight, gentlemen all, and every one a veteran of air or army service, represented a wholesome supplement to the sports and community life of the village. At the Elm Tree hotel, their courtesy and considerate tendencies won for themselves homelike freedom of residence. They, in turn, had sincere comment of a most favorable type to make regarding the modern facilities and high quality of hotel service provided by the proprietress, Mrs. W. A. Irwin, and her daughter, Mrs. Earl Culp.

The group included V. C. Agasse of Arnprior, Robert Averill of Toronto, Clarence Bevan of Cobourg, David Fischer of Walkerton, Lloyd Grant of Stayner, Keith Jackson of Northbrook, Kenneth MacLean of Barrie and John A. Pipher of Cannington.

Field work in Palgrave and Woodbridge district represented one phase in their training offered on a new rehabilitation basis by the Ontario Hydro-Electric Power Commission. Upon leaving here, all were posted to positions in various parts of Ontario. No two of the group will be together.

The Advertiser, through the kind thought of Mr. Fischer, was enabled to meet Fred Tate, chief instructor at the Hydro Rehabilitation school on Royal York Rd. S., Toronto, just a week ago. As a token of the long-established Hydro executive policy of encouraging citizen interest in the ever-forward surge in development of this world-noted public utility, Mr. Tate proved to be an accomplished host in a personally-conducted tour of the school premises.

Here it is that veterans wishing to make a career out of Hydro are given a concentrated ten-week course. To

a casual observer, the congenial environment, the ultra-modern mechanical facilities and the exacting standard of instruction indicate strikingly how Hydro foresight is not merely planning but actually at work behind the scenes paving the way far in advance for unlimited Ontario development with this internationally famous service-at-cost boon.

Young men who contributed a most vital period of their lives toward Empire defence are enabled at this school to absorb in a matter of weeks all the knowledge of practice and theory accumulated in the hard school of experience by Hydro linemen and engineers in the last 40 years. Military service has opened the door to what otherwise might have been an unattainable career to public service for these young men from best homes in urban and rural Ontario. Final benefits will be reaped by the swelling legion of Hydro users throughout the province.

ELMIRA

(Continued from page 15)

pany Limited; Link-Belt Company Limited; Silverwood Dairies Limited; Seiling Hatcheries; Jackson's Fox Ranch; Brox Florist and Glad Gardens; The Elmira Bootee Company; Elmira Machine Shop; Elmira Aluminum; and C. Brubacher's Tannery. This by no means completes the list of companies, but it does give a cross-section of the industries located there.

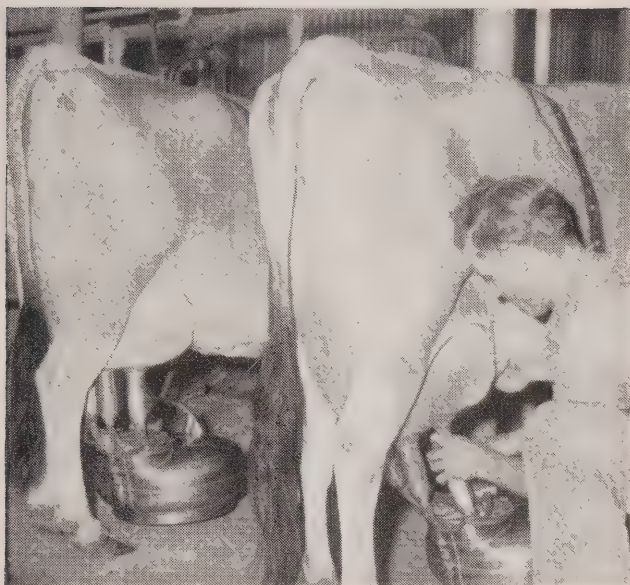
Most visitors to this enterprising municipality are impressed by the solid community life for which this town has been noted since the early pioneers settled there. Over 75 per cent. of the people own their well-built homes, and perhaps the many fine maple trees, which are found in the residential district, are symbolic of the spirit of these quiet and earnest Canadian citizens. They are proud of their schools, churches, and well-stocked Carnegie library, the musical and horticultural societies and the community service club. Their annual fairs are reported to be outstanding among the towns of Ontario.

One of the prominent citizens, who claimed Elmira as his birthplace, was the late Professor Augustus Vogt, who was the originator of the widely known Mendelssohn choir.

Hydro, which is invariably linked with the progress of any industrial centre in Ontario, is ably administered in this town by A. Winger, chairman; Dr. C. E. Gibson, mayor, and A. Brubacher, commissioners, and A. M. Bowman, who has served as manager for over twenty-five years.

HYDRO AT WORK ON THE FARM

THE MILKING MACHINE



Ask any farmer lucky enough to have Hydro on his farm which piece of electrical equipment he would least care to do without and he'll tell you that he would certainly hate to give up his electric milker and go back to the old-fashioned method.

The idea of a mechanical milker was thought of a long time ago and the first one seems to have been patented in Sweden in 1894. Since that time they have been perfected until today they are completely efficient, cutting milking time in half and resulting in more milk and cleaner milk.

It has been estimated that with a herd of 10 to 18 cows there is a saving of 30 man-hours per year in the milking time per cow, while with larger herds this may amount to as high as 57 man-hours per cow per year.

The pipe line milking machines have a consumption of from 1.5 to 3 kilowatt-hours per cow per month. Taking an average rate of 2½ cents per kilowatt-hour, the annual cost for electricity would be from 45 cents to 90 cents per cow per year. When comparing this to the saving of from 30 to 57 man-hours per cow per year, it can be seen how the electric milker contributes to a more economical operation.

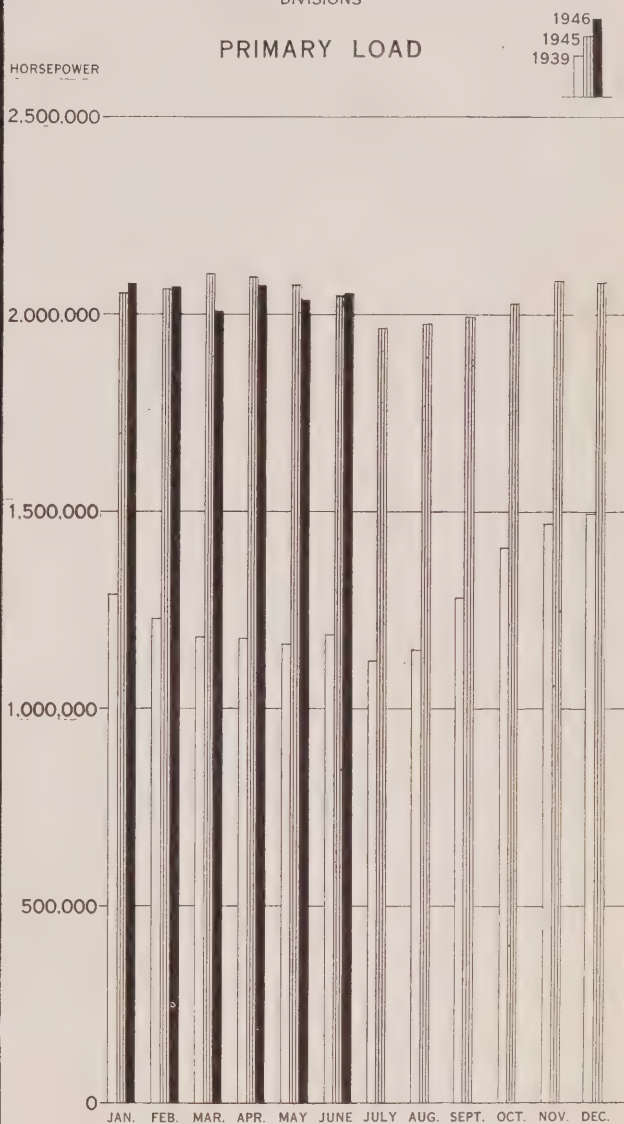
From the viewpoint of the cow the electric milker is a boon too. Its nervous system is delicately adjusted and does not respond favourably to either incompetent or even unaccustomed hands. With the electric milker the pulsations are controlled and completely uniform so that the milking is done in exactly the same way each time.

The apparatus itself has been designed to be as simple as possible and yet give the desired results. At milking time the farmer simply places the milker in position, slides on the four suction cups, and lets electricity do the work. The milk is removed by means of suction or vacuum.

Both the milker and the pail are constructed so that they can be taken apart and kept scrupulously clean. The pail is usually made of aluminum or stainless steel, the milker of metal and rubber. It is light, easy to handle and easy to care for, and for a technical apparatus it requires surprisingly little repair or replacement.

SOUTHERN ONTARIO SYSTEM EMBRACING NIAGARA, GEORGIAN BAY AND EASTERN ONTARIO DIVISIONS

PRIMARY LOAD



PRIMARY LOADS

AREA SERVED BY	MAXIMUM 20-MINUTE PEAK H.P.		PER CENT INCREASE
	JUNE, 1946	JUNE, 1945	
SOUTHERN ONTARIO SYSTEM	2,053,826	2,043,168	+ 0.5
THUNDER BAY SYSTEM	133,780	121,984	+ 9.7
NORTHERN ONTARIO PROPERTIES	193,914	213,324	- 9.1
TOTAL	2,381,520	2,378,476	+ 0.1

PRIMARY AND SECONDARY LOADS

SOUTHERN ONTARIO SYSTEM	2,153,370	2,149,944	+ 0.2
THUNDER BAY SYSTEM	148,927	132,976	+ 12.0
NORTHERN ONTARIO PROPERTIES	257,339	269,980	- 4.7
TOTAL	2,559,636	2,552,900	+ 0.3

MUNICIPAL LOADS, MAY, 1946

SOUTHERN ONTARIO SYSTEM

NIAGARA DIVISION (25-Cycle)

	H.P.	Domes- tic Con- sumers
Acton	1,995	544
Agincourt	232	168
Ailsa Craig	174	147
Alvinston	157	205
Amherstburg	1,249	734
Ancaster Twp.	512	394
Arkona	79	117
Aurora	1,876	793
Aylmer	1,044	758
Ayr	253	227
Baden	632	168
Beachville	827	167
Beamsville	629	399
Belle River	269	314
Blenheim	697	560
Blyth	169	184
Bolton	290	172
Bothwell	184	185
Brampton	3,929	1,627
Brantford	24,107	8,337
Brantford Twp.	1,823	1,476
Bridgeport	260	178
Brigden	149	125
Brussels	220	256
Burford	354	235
Burgessville	79	64
Burlington	1,976	1,234
Burlington Beach	594	732
Caledonia	419	452
Campbellville	50	50
Cayuga	227	186
Chatham	8,336	4,575
Chippawa	398	364
Clifford	134	130
Clinton	801	593
Comber	183	120
Cottam	101	131
Courtright	63	91
Dashwood	140	102
Delaware	94	71
Delhi	629	609
Dorchester	126	157
Drayton	144	167
Dresden	580	466
Drumbo	138	90
Dublin	48	61
Dundas	3,199	1,458
Dunnville	1,646	1,063
Dutton	302	234
East York Twp.	11,427	11,918
Elmira	1,690	554
Elora	568	355
Embro	174	125

	H.P.	Domes- tic Con- sumers
Erieau	203	197
Erie Beach	33	79
Essex	730	528
Etobicoke	11,913	6,157
Exeter	900	544
Fergus	1,646	770
Fonthill	218	300
Forest	702	510
Forest Hill	7,993	3,537
Galt	13,008	4,296
Georgetown	2,294	833
Glencoe	236	230
Goderich	1,863	1,361
Granton	89	85
Grimsby	1,093	655
Guelph	13,972	5,703
Hagersville	1,342	406
Hamilton	163,535	43,700
Harriston	620	378
Harrow	646	350
Hensall	240	210
Hespeler	3,113	825
Highgate	105	107
Humberstone	612	738
Ingersoll	3,942	1,568
Jarvis	177	163
Kingsville	700	641
Kitchener	32,820	8,718
Lambeth	154	140
LaSalle	382	259
Leamington	2,152	1,688
Listowel	1,623	801
London	46,183	19,859
London Twp.	593	494
Long Branch	1,821	1,564
Lucan	239	186
Lynden	137	105
Markham	482	350
Merlin	105	124
Merritton	10,261	962
Milton	1,732	555
Milverton	514	263
Mimico	3,308	2,306
Mitchell	891	521
Moorefield	113	56
Mount Brydges	146	166
Newbury	49	70
New Hamburg	805	384
Newmarket	2,475	1,022
New Toronto	12,863	2,029
Niagara Falls	12,713	4,984
Niagara-on-the-Lake	952	623
North York Twp.	12,388	7,019
Norwich	592	391
Oil Springs	195	104
Otterville	136	143

	H.P.	Domes- tic Con- sumers
Palmerston	698	400
Paris	2,092	1,215
Parkhill	282	315
Petrolia	1,122	825
Plattsville	185	118
Point Edward	1,792	349
Port Colborne	2,113	1,655
Port Credit	1,085	649
Port Dalhousie	1,112	691
Port Dover	634	750
Port Rowan	144	171
Port Stanley	836	825
Preston	4,413	1,689
Princeton	190	98
Queenston	162	81
Richmond Hill	670	414
Ridgetown	634	599
Riverside	1,402	1,559
Rockwood	182	174
Rodney	182	239
St. Catharines	28,086	8,742
St. Clair Beach	123	102
St. George	248	154
St. Jacobs	390	141
St. Marys	2,133	1,076
St. Thomas	9,187	4,718
Sarnia	7,325	5,403
Scarborough Twp.	6,063	5,950
Seaforth	1,152	524
Smithville	345	185
Simcoe	3,204	1,678
Springfield	93	133
Stamford Twp.	3,530	2,497
Stoney Creek	300	289
Stouffville	495	408
Stratford	8,813	4,561
Strathroy	1,705	876
Streetsville	243	208
Sutton	348	468
Swansea	3,433	2,096
Tavistock	746	300
Tecumseh	463	711
Thamesford	304	147
Thamesville	294	243
Thedford	140	166
Thorndale	138	83
Thorold	3,381	1,274
Tilbury	844	502
Tillsonburg	1,956	1,243
Toronto	395,651	154,302
Toronto Twp.	4,717	3,065
Wallaceburg	5,808	1,387
Wardsville	52	65
Waterdown	318	280
Waterford	546	397
Waterloo	6,979	2,306
Watford	463	312

MUNICIPAL LOADS, MAY, 1946

	H.P.	Domes- tic Con- sumers		H.P.	Domes- tic Con- sumers		H.P.	Domes- tic Con- sumers
Welland	11,823	3,264	Neustadt	47	110	Kemptville	426	393
Wellesley	146	137	Orangeville	975	746	Kingston	19,216	7,867
West Lorne	385	227	Owen Sound	8,128	3,663	Lakefield	479	360
Weston	5,543	1,700	Paisley	184	202	Lanark	128	173
Wheatley	271	237	Penetanguishene	1,283	773	Lancaster	59	116
Windsor	57,889	26,909	Port Carling	207	211	Lindsay	3,892	2,289
Woodbridge	933	314	Port Elgin	580	509	Madoc	272	318
Woodstock	9,522	3,448	Port McNicoll	103	241	Marmora	164	249
Wyoming	137	166	Port Perry	400	381	Martintown	49	56
York Twp.	23,604	21,946	Priceville	10	38	Maxville	127	176
Zurich	173	149	Ripley	117	129	Millbrook	140	182
			Rosseau	35	58	Morrisburg	423	444
	(66 2/3-Cycle)		Shelburne	342	314	Napanee	1,908	897
Bronte	185	244	Southampton	625	567	Newcastle	238	230
Oakville	1,787	1,285	Stayner	369	341	Norwood	278	242
Trafalgar Twp.	705	573	Sunderland	111	140	Omeme	233	173
			Tara	145	164	Orono	108	183
	GEORGIAN BAY DIVISION		Teeswater	179	233	Oshawa	20,124	6,765
	(60-Cycle)		Thornton	31	67	Ottawa	41,553	15,658
Alliston	489	447	Tottenham	138	161	Perth	2,182	1,110
Arthur	204	199	Uxbridge	462	423	Peterborough	20,040	6,702
Bala	273	336	Victoria Harbour	86	271	Pictou	1,727	1,336
Barrie	5,361	2,471	Walkerton	1,315	687	Port Hope	3,275	1,455
Beaverton	310	331	Waubushene	161	235	Prescott	1,632	815
Beeton	118	148	Warton	406	437	Richmond	93	85
Bradford	372	291	Windermere	38	64	Russell	102	119
Brechin	65	53	Wingham	930	560	Smiths Falls	3,603	2,012
Cannington	290	262	Woodville	86	116	Stirling	443	293
Chatsworth	95	108				Trenton	5,675	1,833
Chesley	687	456				Tweed	386	321
Coldwater	209	159				Warkworth	107	135
Collingwood	2,536	1,650				Wellington	233	343
Cookstown	95	119				Westport	130	149
Creemore	178	176				Whitby	1,825	1,054
Dundalk	267	210				Williamsburg	114	86
Durham	464	464				Winchester	515	309
Elmvale	165	191						
Elmwood	121	72						
Flesherton	96	126						
Grand Valley	210	184						
Gravenhurst	1,486	593						
Hanover	1,610	850						
Holstein	22	63						
Huntsville	1,354	744						
Kincardine	866	741						
Kirkfield	27	37						
Lucknow	531	287						
MacTier	146	128						
Markdale	203	231						
Meaford	866	757						
Midland	4,467	1,625						
Mildmay	158	184						
Mount Forest	647	502						

	H.P.	Domes- tic Con- sumers		H.P.	Domes- tic Con- sumers		H.P.	Domes- tic Con- sumers
Neustadt	47	110	Kemptville	426	393			
Orangeville	975	746	Kingston	19,216	7,867			
Owen Sound	8,128	3,663	Lakefield	479	360			
Paisley	184	202	Lanark	128	173			
Penetanguishene	1,283	773	Lancaster	59	116			
Port Carling	207	211	Lindsay	3,892	2,289			
Port Elgin	580	509	Madoc	272	318			
Port McNicoll	103	241	Marmora	164	249			
Port Perry	400	381	Martintown	49	56			
Priceville	10	38	Maxville	127	176			
Ripley	117	129	Millbrook	140	182			
Rosseau	35	58	Morrisburg	423	444			
Shelburne	342	314	Napanee	1,908	897			
Southampton	625	567	Newcastle	238	230			
Stayner	369	341	Norwood	278	242			
Sunderland	111	140	Omeme	233	173			
Tara	145	164	Orono	108	183			
Teeswater	179	233	Oshawa	20,124	6,765			
Thornton	31	67	Ottawa	41,553	15,658			
Tottenham	138	161	Perth	2,182	1,110			
Uxbridge	462	423	Peterborough	20,040	6,702			
Victoria Harbour	86	271	Pictou	1,727	1,336			
Walkerton	1,315	687	Port Hope	3,275	1,455			
Waubushene	161	235	Prescott	1,632	815			
Warton	406	437	Richmond	93	85			
Windermere	38	64	Russell	102	119			
Wingham	930	560	Smiths Falls	3,603	2,012			
Woodville	86	116	Stirling	443	293			

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Shelburne	342	314	Napanee	1,908	897			
Southampton	625	567	Newcastle	238	230			
Stayner	369	341	Norwood	278	242			
Sunderland	111	140	Omeme	233	173			
Tara	145	164	Orono	108	183			
Teeswater	179	233	Oshawa	20,124	6,765			
Thornton	31	67	Ottawa	41,553	15,658			
Tottenham	138	161	Perth	2,182	1,110			
Uxbridge	462	423	Peterborough	20,040	6,702			
Victoria Harbour	86	271	Pictou	1,727	1,336			
Walkerton	1,315	687	Port Hope	3,275	1,455			
Waubushene	161	235	Prescott	1,632	815			
Warton	406	437	Richmond	93	85			
Windermere	38	64	Russell	102	119			
Wingham	930	560	Smiths Falls	3,603	2,012			
Woodville	86	116	Stirling	443	293			

	H.P.	Domes- tic Con- sumers		H.P.	Domes- tic Con- sumers		H.P.	Domes- tic Con- sumers
Neustadt	47	110	Kemptville	426	393			
Orangeville	975	746	Kingston	19,216	7,867			
Owen Sound	8,128	3,663	Lakefield	479	360			
Paisley	184	202	Lanark	128	173			
Penetanguishene	1,283	773	Lancaster	59	116			
Port Carling	207	211	Lindsay	3,892	2,289			
Port Elgin	580	509	Madoc	272	318			
Port McNicoll	103	241	Marmora	164	249			
Port Perry	400	381	Martintown	49	56			
Priceville	10	38	Maxville	127	176			
Ripley	117	129	Millbrook	140	182			
Rosseau	35	58	Morrisburg	423	444			
Shelburne	342	314	Napanee	1,908	897			
Southampton	625	567	Newcastle	238	230			
Stayner	369	341	Norwood	278	242			
Sunderland	111	140	Omeme	233	173			
Tara	145	164	Orono	108	183			
Teeswater	179	233	Oshawa	20,124	6,765			
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"What do you mean . . . I'm lucky?"

Lucky lad! Getting snagged on the wire in his effort to climb over a Hydro barrier . . . probably to recover a ball . . . may have saved his life. Some boys have not been so lucky.

Hydro energy is one of the finest things we have in Ontario to make for better living. But it can stop one from living, if you thoughtlessly give it a chance to flash through your body. Every possible precaution for safety is taken by your Hydro; but once in a while someone gets careless or "takes a chance", and tragedy strikes. A boy climbs a pole and touches a wire. Or he flies his kite near a Hydro line, and it contacts a high-voltage circuit and carries death or injury to whoever is holding it. Sometimes a storm breaks down a line and someone takes hold of the broken live wire with disastrous results. These are just examples of acts that are beyond the power of Hydro to prevent. Your Hydro can only warn of danger, and seek co-operation of parents and teachers and all who have influence with those who might expose themselves to that danger.

Hydro need never be a threat to anyone who:

1. Will not climb poles.
2. Will stay away from distribution lines and transformer stations.
3. Will keep away from fallen wires.



For your safety, in case of trouble immediately notify your nearest Hydro office. But never, never touch a fallen wire.



THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO

HYDRO *News*



BY ALBERT DECEW



"Anyway, it keeps him from breaking insulators!"

Father is getting wiser. Sonny used to take pot shots at insulators on Hydro poles. Then Dad discovered he could buy a whole set of dinner plates for less than the cost of the damage resulting from even one broken insulator. Of course, you wouldn't be shooting at your dinner plates; but, being a citizen of Ontario and one of the owners of Hydro, it is just as much a loss of your property when Hydro insulators are broken.

It is not that the insulator is so costly in itself, but one broken insulator can cut the service on a line. That line may be carrying energy to the electric range at home, or the operating room at the hospital, or to the factory where Eddy is trying to build up a pay cheque by piece work. Someone throws a stone or shoots a rifle. An insulator shatters with fascinating proof of marksmanship. This damage very often causes a pole to take fire, allowing live wires to drop to the ground, endangering human and animal life.

In any case, whoever is depending on that line for electric service is held up until repairs can be made. That can cost somebody plenty. A crew of men and a truck may have to travel miles to locate and replace the broken insulator, resulting in a great loss of time and money. When you stop to think about it, it's hardly worth it, is it?



You, as a citizen of Ontario, can do a great deal to help to maintain the very low Hydro rates which have now been reached. Your Commission appeals to you to use your influence at every opportunity to prevent the deliberate or careless destruction of Hydro property.



THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO



THE HYDRO - ELECTRIC POWER COMMISSION OF ONTARIO

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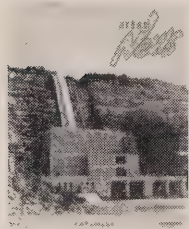
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THE FRONT COVER



THIS month's front cover illustration, entitled "New Unit At DeCew," captures some of the rugged beauty of the Niagara escarpment. The new DeCew plant was opened on Friday, October 15th, 1943, when a 250-ton generator whirled into action to add 65,000 horsepower to the Southern Ontario system. The second unit, of 70,000 horsepower capacity, is now being installed and is expected to be in operation by the end of next year.

Volume 33

September, 1946

Number 9

CONTENTS

	Page
Power In Dynamic Form - - - - -	2
Page Three - - - - -	3
Fierce Laird Once Held Sway - - - - -	4
St. Marys - - - - -	7
When Day Is Done - - - - -	9
Sees Graduate Engineer Like Man With Car - - - - -	11
Yangtze Development - - - - -	12
A Visitor From China - - - - -	13
Remember? - - - - -	14
Chesley - - - - -	16
Down Through The Years - - - - -	18
Around The Hydro Circuit - - - - -	20-21
Hydro Home Forum - - - - -	23
Lighter Lines - - - - -	24
This And That - - - - -	25
Quite A Bore - - - - -	26
Hydro At Work On The Farm - - - - -	27
Monthly Load Summary - - - - -	27
Municipal Loads - - - - -	28





Picture of the Month

Power on the 10th most dynamic waterfalls captured in
this majestic water reproduction—most superbly captured by
I. H. Miller at Hydro-Nation Development.

HARNESSING HORSEPOWER

THIS year The Hydro-Electric Power Commission of Ontario will complete four decades of service to the people of this province. From the smallest of beginnings in 1906, the Commission has grown to be one of the greatest organizations of its kind in the world, and its vast and varied experience in water power development has placed it in a position where its counsel in hydro-electric undertakings is frequently sought.

The advice the Commission proffers on such occasions is naturally of a highly technical nature. Up to the time of publication in *Hydro News* of the series of articles entitled "Harnessing Horsepower," there had been no attempt to portray the activities of the Commission from the beginning to the end of a major power development in a popular style that would still retain instructive values for the student and even the professional engineer. When the Commission's engineers and its editorial staff got together at the task, it was at first difficult to arrive at a common formula, and there was an occasional difference of opinion with blue pencils being used freely on both sides as the newsmen and engineers worked to achieve a happy compromise between a technical and popular style. Finally, in the co-operative spirit which is traditional with Hydro, the proportions of popular and technical material were amicably decided upon.

So great was the interest shown in these articles when they were published in chapter form in *Hydro News* that there was a demand for their publication in pamphlet form. Each chapter was carefully revised for technical accuracy by the engineer responsible for it, the continuity was improved, and many new illustrations including special photographs by J. H. Mackay of the Commission staff, were added to the text. The post-war planning of the Commission, in its broader aspects was also brought up to date.

Many encomiums have been received by *Hydro News* on the appearance of the pamphlet and on extensive and highly informative character of the information it contains. This has been a great satisfaction to all of the Commission's staff who

were concerned with its preparation. The object was to present an interesting and faithful picture of the construction activities of the Commission to students and to the many others throughout Ontario and elsewhere who are interested in the fascinating subject of hydro-electric engineering.

PIONEER IN DISTRIBUTION

SAMUEL BINGHAM HOOD, whose death in San Leandro, California, removed a pioneer in the electrical distribution field, will be remembered by many engineers in Canada, as the man who developed the common neutral system of distribution now in general use in this country and the United States.

Mr. Hood was born in Philadelphia seventy years ago—a descendant of the Hoods who were prominent in political and military affairs under Washington. After spending some years in charge of outside construction work for the Philadelphia Electric Company, he came to this country as superintendent of distribution for the old Toronto Electric Light and Power Company, and it was here that he achieved outstanding recognition for the introduction of the system which will always be associated with his name.

This was in 1910. And in 1913, while still in Canada, he devised a method for the interconnection of the secondary neutral and the lightning arrester ground—a method which in recent years has demonstrated its effectiveness in reducing failures caused by lightning.

Returning to the United States in 1916, Mr. Hood became associated with the Northern States Power Company of Minneapolis, specializing in the transmission and distribution of electric power. It was here that he developed the multiple street lighting control which was one of the greatest advances of the day.

Moving to California in 1927, Mr. Hood became consultant to the James R. Kearney Corporation, a position he held up to the time of his death. He was honoured by many engineering societies during his long and useful career.

FIERCE LAIRD ONCE HELD SWAY WHERE HYDRO NOW BUILDS PLANT

By MILDRED C. REDMOND,
Hydro News

Discovery by Hydro engineers of a packet of old documents, consisting of by-laws, petitions and other data dating back about a hundred years has brought to light a number of interesting facts concerning the township of McNab on the Madawaska river near Stewartville where the Commission is now proceeding with the construction of a new 81,000 horsepower development.

Find Made In Old Shack

The find, which has been reported to the provincial government, was made in an old shack that was once the township hall, located a quarter of a mile from the Allan Stewart farm. After studying the documents, Hydro News dug further into the history of this interesting old township and learned some facts which date back to a June day in the year 1840. At that time, a curious scene was enacted on the banks of the Madawaska River very near the site of Hydro's new Stewartville power project. It was then to the farm of one Allan Stewart, which had been selected as a meeting place, that settlers gathered from all over the township. The Piper of the Township and of the people was there and the martial music of the pibroch was heard for miles through the Canadian forest to call the people to the assembly. It was in the

nature of a revolutionary meeting against the self-appointed tyrant of the district—Laird of McNab.

McNab of McNab, as he called himself, a burly Highland chieftain, had come to Canada in 1823 after trouble in his native Highlands and began what must be one of the strangest chapters in Canadian pioneer history. In 1824 he got the government to lease him 80,000 acres of untouched woodland along the Madawaska river. There he built himself a fine cabin befitting a Highland chief, arranged to bring out some hundred Highland settlers and prepared to set up in the heart of the Canadian forest what amounted to a feudal state wherein he was to be absolute lord and master and his "vassals" were to do what they were told. On taking over their lot of land the new tenants signed an agreement to the effect that they would pay yearly to the Laird, his "heirs and successors for ever" one bushel of wheat or Indian corn or oats of like value for every cleared acre upon the lot.

McNab had royal ideas and proceeded to carry them out in a high-handed manner. He had moments of generosity and prided himself of dispensing real Highland hospitality but at the same time he had a violent and domineering personality and ruled his "clan" with such an iron hand and with such cruelty and venge-

fulness over imagined wrongs that the whole settlement was put in a most unpleasant position, to put it mildly.

The whole early history is one long story of friction between the settlers and their feudal-minded Laird. The meeting in 1840 was a sort of culmination of years of grievance and real hardship. The Laird had a small devoted group about him but the large majority of the township people were in open rebellion against him. As a result of this meeting a petition was sent to the Governor-General of Canada asking that an investigation be made since they could no longer bear the conditions under which they were living.

The government did act finally and in the end the rule of the McNab was broken but not before a long and bitter struggle involving a series of lawsuits had taken place. The Laird, old now, but still fierce and autocratic-minded in spite of his shattered dream of feudal glory, retired from his Canadian estates in 1843 and spent his last years in France.

Burial Ground Link With Past

The township of McNab then began to progress and from a population of 782 it increased in the following ten years to 6,000. The old Laird was soon forgotten and almost the only memory of the Clan customs was the burial ground named

(Continued on page 6)



LEFT: ONE of the few remaining landmarks from the early days of McNab township, the hall where the old township documents were found. Centre: a contemporary portrait of the fierce laird of McNab. Right: One of the bridges which spans the Madawaska river; a number of the documents concerned the building and repair of its predecessor.

BY-LAW

To provide for the due Performance of STATUTE LABOUR, within the Jurisdiction of the Municipal Corporation of the Township of McNAB:

BE IT ENACTED BY THE MUNICIPAL COUNCIL OF McNAB, constituted and assembled at McNab, by virtue and under the authority of an Act passed during the Second Session of the Third Parliament of Canada, entitled—"An Act to provide by one General Law, for the erection of Municipal Corporations, and the establishment of Regulations of Police, in and for the several Counties, Cities, Towns, Townships and Villages in Upper Canada—And it is hereby enacted by the Authority of the same, That each and every Pathmaster in the Municipality shall, and they are hereby required to obey and conform themselves to the orders given by the Council from time to time, relative to the distribution of Labor to be done in their respective Sections, and should any Pathmaster neglect or refuse to obey their orders, or should he lay out, or direct to be laid out, any portion of Labor in any other place than that in which he was directed by the Council, he shall be liable to a penalty of not less than Five Shillings, nor more than Five Pounds, currency; which penalty may be recovered on the complaint of any person against the offending Pathmaster, before the Town Reeve, or any Justice of the Peace within the limits of the Corporation, or in default thereof, the amount of the fine imposed shall be levied by a Warrant of Distress under the hand and seal of the convicting Justice, by any Constable, out of the Goods and Chattels of the said Pathmaster; and should it be necessary to sell the said Goods and Chattels, the Constable shall give at least eight days' public notice, previous to proceeding to sale; and if no Goods and Chattels can be found, the offender shall be punished by imprisonment, not exceeding twenty days, in the County Gaol, and shall be committed thereto by the convicting Justice.

II. And be it enacted by the authority aforesaid, That it shall be the duty of every Pathmaster, on or before the first Monday of November, to deliver to the Clerk of the Corporation, an account in writing, showing how the Labor has been performed; and he shall hold himself in readiness to give his affirmation to the return, if required by the Council.

III. And be it enacted by the authority aforesaid, That each Pathmaster shall give due notice to every person within his Division, liable to perform Statute Labor, at least six days' previous to his being required to perform the same, and that eight hours shall be one day's Labor.

IV. And be it enacted by the authority aforesaid, That it shall be at the discretion of any person to compound for his Labor, on or before the first Monday in July, at the rate of Two shillings and six pence per day; all of which commutation money shall be paid to the Pathmaster and expended by him within his Section.

And be it enacted that should any person refuse or neglect to do his or her Statute labor, it shall be the duty of the Pathmaster to complain in his report of Statute labor to the Council Clerk of any such defaulter and it shall be the duty of the Clerk to complain of such defaulter to the Town Reeve or any Justice of the Peace within the municipality and the defaulter shall be subject to the same fines and penalties as a defaulting Pathmaster; and further it shall be the duty of

FACSIMILE OF one of the documents found in the township hall in the domain of The McNab; it concerns the statute labour laws of the times, and duties of the Pathmaster. The Pathmaster had the responsibility of making new roads, and keeping existing roads open and in repair, as his title implies. For the purpose he had the right to exact statute labour from every able-bodied resident in the district, that is a day or days of free labour. The only way the settler could get out of this road work was to substitute money at the rate of two shillings and sixpence for the equivalent of one day's work.

FIERCE LAIRD

(Continued from page 4)

Inch-Bui at the mouth of the Madawaska.

And, now, concerning the old documents discovered by Hydro engineers, it was found that the information on these parchments, for the most part, was recorded in fine hand-writing which is still quite legible. The meaning however, is not always clear, and the grammar would probably prompt a professor of English to become unsteady on his feet and even faint.

The interest in these faded documents, which date approximately from the year 1850 to 1870, lies chiefly in the picture they give of certain aspects of life in a remote Canadian community of that period and in their quaintness of language.

Right To Exact Statute Labour

According to these papers, one of the important township officials was the Pathmaster, whose duty it was to make the roads and keep them in condition. For the purpose he had the right to exact Statute Labour from the citizens of the district, that is a day or days of free labour. There is a by-law giving his exact responsibilities. He must give six days notice to everyone liable to perform this labour. All persons liable to perform Statute Labour must perform same between 15th of June and 15th of July in each year. If, however, the citizen has no desire to go out and personally repair roads, he can pay money instead at the rate of two shillings sixpence for the equivalent of one day's work. One of the Pathmaster's headaches was "to order removal of any obstruction from any public road twenty-four hours after he shall be aware thereof". The by-law goes on to say, "and whereas it frequently happens that Branches and sometimes Trunks or parts of the Trunks of Trees are left on the Highway of the Township by Parties engaged in the Lumber Trade or persons cutting Timber for other purposes. Be it therefore enacted by the authority aforesaid that it shall be the duty of the Pathmaster to give notice to the person or persons so guilty (if known) either verbally or by leaving a written notice addressed to such party, to have the same removed within twenty-four hours to a distance of not less than ten feet from the centre of the track usually travelled." If the offending party did not conform they were liable to a fine.

Another by-law provides for the "Height of Fences." "All fences built of Logs or Rails shall be four and one half feet high and not be more than eight inches between the Rails which shall be a Lawful Fence."

SERVICE TO RURAL CONSUMERS



AS AN added service to its rural consumers The Hydro-Electric Power Commission of Ontario has arranged for the merchandising of its special, long life, 1500-hour lamps in many of its Rural Operating Area Offices. Already 45 of these offices have received the facilities necessary to carry on this operation. These include a stock of various lamps, a supply of promotion material such as posters, an illuminated display stand, price cards, window transfers and blotters, and a new Price Schedule for the lamps which has prices, descriptions of the lamps, instructions for ordering and other details. In the picture, a lamp is being tested on one of the specially-designed testers that is also part of the equipment. These lamps are made according to Hydro specifications and are inspected during manufacture by a Hydro resident engineer and by the Hydro Testing Laboratories. The availability of the lamps to rural areas will be a great convenience to those many farmers who are now enjoying the benefits of Hydro.

Other papers refer to private matters. This one of 1851 has been written with some heat and incidentally with a fine disregard for spelling or punctuation: "Sir, I am informed that James Sanboare is to mak application at the sitting of the Council to have the proving line opened from the Main Road Leading from Sand Point to the Madawaca it is the Line between Lot No. 10 and 11 and 13 Concession he wants it opened to the river but I wish to acquaint you that part of my fence is on the Line but on the other side there is a space of two acres which I think when you consider that Matter that you will not throw the whole of my Clearance open for the Sake of Satisfying his Mallice I also wish to show you it is nothing else but Mallice two thirds of the whole of his fence is on the whole Line I would not ask this Request but as I have to leave home next weak and will not return until some time in July I hope that you and your brother Councilors will look into the Matter and if I am spared until fall I will endeavour to have my fence removed and remain yours with respect. John Gough P.S. this fence properly speeking I have nothing to do with as I am living upon my father-in-laws lot but since he warned me I thought it best to acquaint you of the matter." If the Reeve and his brother Councilors

made anything out of this they were astute men!

In 1867 one William Gemmill petitioned for twelve dollars to cover the expenses of looking after a sick squaw, "The Petition of the undersigned humbly sheweth that in the latter end of the month of April, Old Jacup the Indien old Squaw was very seriously burned by their camp fire and so serious were the burns the old woman received that she died two days afterwards. Now as said old Indien was in very indigent circumstances and not able to obtain any healp etc. your petitioner got her to his own house and there did care for her and also did get her coffin and cotton cloth etc. to have her remains properly interred at an expense and trouble to your petitioner of at least twelve dollars—your petitioner will every pray—"

There is also a polite request from a small shopkeeper, "The Patition of the undersigned humbly prayeth that your Honourable body would grant your patitioner a license to sell spiritus lickers etc. in his shop at the village of White Lake, from this date until the present licenses expire—"

The township of McNab today is a well-settled district with very little to remind the farmers of the early days and of the fierce Laird but the name itself.

A VISIT TO ST. MARYS

It was in the year 1911 when the benefits of Hydro first became available to the folk of St. Marys.

As this active community marks its 35th anniversary of Hydro, the same progressive spirit of these earlier days is reflected in the five year expansion programme now being undertaken by the St. Marys Public Utilities Commission.

This plan involving an expenditure of some \$75,000 includes the removal of poles from Queen Street, the main thoroughfare; installation of up-to-date street lighting and a general modernization of the utilities' electrical equipment, which, according to Ray Pfaff, the manager, will double the capacity of the system.

Surveyed By Canada Company

The history of the town goes back to 1841, when the locale was surveyed by the Canada Company, who sold an area to James Ingersoll, whose family had already assumed an important position in Canadian affairs, having had a prosperous town in Oxford county named after them.

Ingersoll, along with his brother, built a saw-mill utilizing the water from the Thames river. They called their new home "Little Falls". By 1845, other settlers came in the vicinity, and there was promise of a fine community. In this year, the first council meeting was held to discuss, among other things, a school and an official name for the village. Attending this meeting was the commissioner of the Canada Company, Thomas Mercer Jones and his wife Mary, who was the daughter of the late Bishop Strachan.

Origin Of Name

After hearing considerable discussion without reaching an agreement, Mrs. Jones jocularly proposed to have the place named after herself, and if the suggestion were acceptable, she would give £10 towards the erection of the school. This was unanimously agreed upon, and so St. Marys became its official name.

However, popular towns, like popular people, get nicknames and, among these, St. Marys is sometimes referred to as the "Stone Town". This is because of its location on solid rock and its numerous quarries which have furnished the building material for many fine homes and other establishments in the town.

Some years ago the town was "dubbed", The Four Thousand. This was because of its population, which never seems to vary from that figure; its incorporated area of 4,000 acres; and because the power load was 1,000 horsepower for the town and 3,000 horsepower for the cement works, which added together made another four thousand figure.

When Hydro had its inception in this town in 1911, the total load was 135

horsepower, and this figure, unlike the population, has increased annually until at present it stands at 2,300 horsepower. The first Hydro commissioners were William Weir, L. H. Reesor and Mayor F. G. Sanderson.

Hydro News also learned that there are 18 miles of distribution lines, 1,084 domestic consumers, 174 commercial users and 40 industries who contract for power.

Materials Manufactured

The list of materials manufactured in the town includes cement, snow fences, lawn mowers, washing machines and their accessories, food choppers and fruit pressers, cheese and grain products. In fact produce is shipped in such quantities from this town that it is known in railway circles as one of the largest shipping centres for its size in the Dominion. It is said that freight earnings, in and out of the town each year, amount to nearly a million dollars. Perhaps one of the reasons for this was because St. Marys had rail service back in 1858, six years before it was officially a town, when the old Grand Trunk established a small station and freight shed there.

Birthplace Of Famous People

Many famous people have been associated with this town. Leon M. Clench, who invented the vacuum train brake was born there, as well as the Hon. Arthur Meighen, former Prime Minister of Canada. Nora Clench, who has been cited as

one of the world's premier violinists, also claimed St. Marys as her birthplace.

Timothy Eaton, whose name is associated with departmental stores, was at one time in business there, and Thomas A. Edison the inventor, did some of his early work in electricity in St. Marys.

First Commercial Butter Factory

This district claims to have had the first commercial butter factory in Canada, and produced the first Canadian cheese.

The town's paper, The St. Marys Journal-Argus, was founded in 1853, and is now being edited by the third generation of the Eedy family. The previous editor, the late Lorne Eedy was often referred to in newspaper circles as the dean of Ontario journalism.

During the past year an athletic commission was formed to direct recreational activity. The idea caught the fancy of the townspeople, who have turned out en masse to participate or "spectate" in the many sporting events.

Modern Swimming Pool

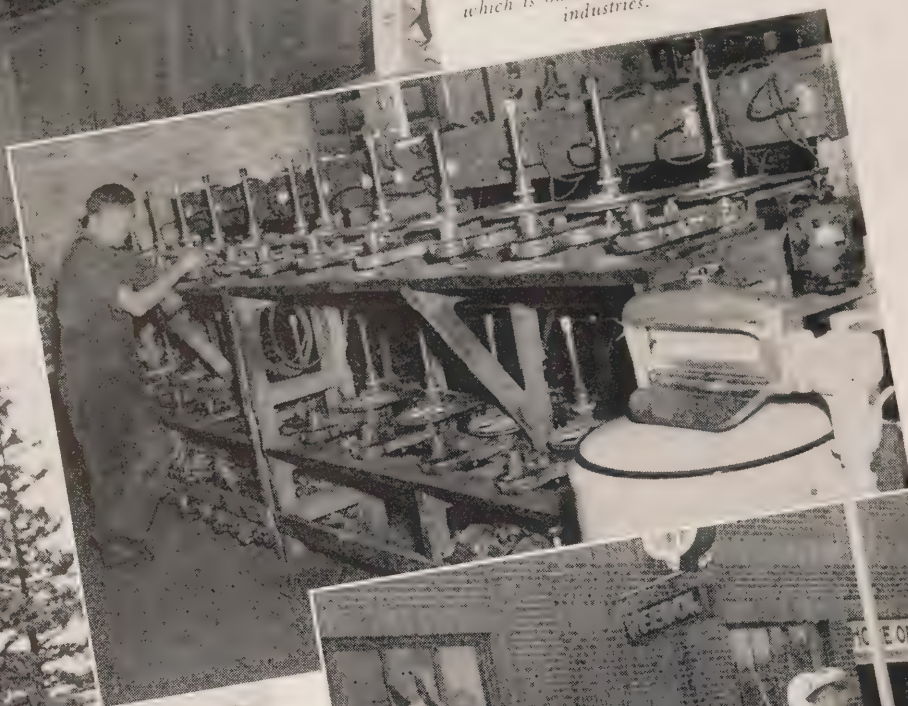
Hand-in-hand with this is the conversion of the "old swimmin' hole", a huge stone quarry, into a modern pool of crystal-clear water, complete with bath house, diving towers, floats, refreshment bar, parking facilities and a dance pavilion.

In and around St. Marys there are many people who own the farms that their forefathers established years ago. This has resulted in a fine cultural community life, as well as a very happy progressive town.



WARM SUMMER days find belles of St. Marys down at the new swimming pool although it has not yet been officially opened. This is part of the town's recreational plan to develop sports and social activities.

HYDRO NEWS photographer did a balancing act to get this picture of Vera Weston in St. Marys Public Utilities' new office. The "shot" below shows how the gear mechanism is tested by actual trial before being installed in washing machines, the production of which is one of St. Marys main industries.



WHEN THE truck pulls ahead (above) the new transformer is skidded up the pole into position by means of a block and tackle. This is part of St. Marys \$75,000 rehabilitation plan, which will include a change in the primary service from 2,300 to 4,000 volts. Recently a new 13 kv. line was built to the substation and the voltage was stepped down from 132 kv. to 550 volts.



THE SPORTY looking "gent" with the horse is T. H. Dobson who was just on his way out to in afternoon trot with his thoroughbred horse, Rex Harvester. Mr. Dobson is chairman of St. Marys Public Utilities Commission. The lad on the left is Chas. Hannah who is receiving instructions from Gerald Near on how to put the train on a meter.



CHAPTER VI.—LIGHTING IN CHINA AND JAPAN

By Mildred C. Redmond,
Hydro News

To the West, the ways of the East have always seemed mysterious; their mechanism of everyday life no less than their modes of thought often seem so much in complete reverse to our own. Their food, clothes and homes are very different from anything we know, yet when it comes to the matter of lighting these homes we find ourselves on familiar ground. Their basic forms of lighting have always been the same as those of the West, only the outward forms are sometimes quite different.

Hollowed-Out Stone Lamps

The history of Chinese lighting began very much as it did in Europe. The earliest known attempts were crude lamps made from a hollowed-out stone. Later, as in the West, these stone bowls gave way to similar ones of metal or clay. This simple form of lamp is one of the many points in common between ancient Egypt and ancient China. It is one of the curious points of history that neither one of these great and cultured civilizations ever made any attempt to improve their artificial lighting. The Egyptians used the shallow bowl of oil without even a pinched part to keep the wick up, until they were annexed by Rome and the Chinese used it for a couple of thousand years longer, that is until the present day.

The westernization of China and Japan was begun towards the end of the last century and naturally gas and electric lighting were two of the modern conveniences that were adopted. Nowadays, the more modern parts of both countries are as well lighted as our own. But in the

out of the way sections can still be found lights that have not changed in the last four thousand years.

In China the two standard lights have been the lamp, and later, the candle. There is a third, even more primitive, that apparently is still used in poor farm homes, that is lighted splinters stuck into the mud walls. They slant down towards the floor, giving a smoky and most dismal light and when they have burnt up to the wall they leave a black smudge on it. They are made from old bamboo trees that have been submerged in rice fields for a week and then dried in the sun.



JAPANESE HOUSEHOLD scene showing the room lit by a decorative standing lamp with a wooden frame and pretty silk shade. Inside there is either a candle or a small saucer lamp.

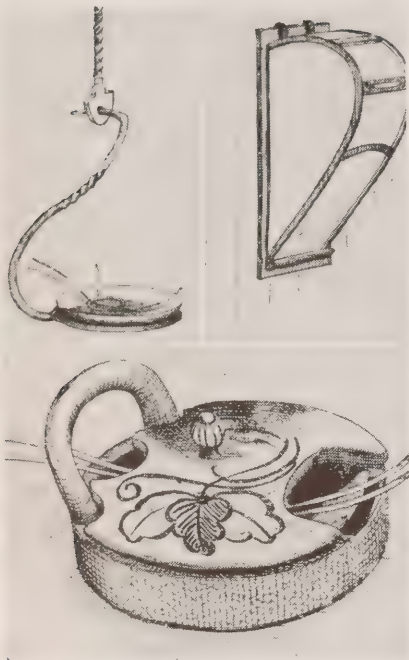
Chinese candles don't date back as far as the lamps but have been popular as lights since they were first introduced. Up to the 8th or 9th centuries they were made solely of beeswax. After that the Chinese discovered how to make them from a vegetable tallow and also from a wax made by a certain insect. This insect wax is considered to be precious and is used mixed with vegetable wax for Buddhist worship. Candles are all made by dipping; often they are coloured, red for festive occasions, white or green for funerals. Candlesticks are both of the socket and pricket type although the latter has been the most popular.

Fuel From Soy Beans

After the earliest period, lamps were made of either metal or porcelain. Typical forms are shallow bronze saucers sometimes set on pedestals or low feet. The wick is of the pith of rushes and the fuel oil from soy beans or rape seeds. The burning end rests on the edge of the saucer, the other end is usually held down in the oil by a small piece of metal. Clay saucer lamps have been found dating from four thousand years ago. The ones used today vary only in workmanship.

Among the variations of lamp forms that the Chinese used was an ingenious bronze travelling lamp with a hinged lid. Sometimes there was beautiful and elaborate work done on the lamps that were to be used in the homes of the wealthy. One such lamp is in the form of a bronze bird standing on a tortoise and holding in its beak the shallow oil bowl. There exists the actual record of the official who ordered this lamp to be made in 28 B.C. for the "Inner Apartment" of the Royal Palace.

Another well-known lamp, almost two thousand years old and now in the Royal Ontario Museum, is an emblematic bronze



THREE DIFFERENT types of common Japanese lamps. Upper left is a hanging iron lamp. Upper right is a handy wall lamp for passageways or stairs. The frame is wood covered with paper and hinged to the wall. At the bottom is a pottery lamp.

tree with an array of small lamps in it. It is of beautiful workmanship and must have been a source of pride to its original owner.

The very first change to be made in Chinese lighting was last century when kerosene was first introduced and led to the newer type of lamps. It is another of the mysterious questions of history why the Chinese didn't develop gas lighting for it is recorded that Chinese necromancers used gas from "fire wells" by collecting it in skins in which fine holes were made and then the jets of gas issuing from these were lit.

Another variation of lighting used by the Chinese is the lantern that was popular in our country for garden parties some years ago. These pretty lights are a form of bamboo covered with paper or silk, and with a lighted candle inside. They are made either with a handle for carrying outside or with a frame that stands on the floor for inside. The Chinese are fond of their lanterns and have a special feast in their honour.

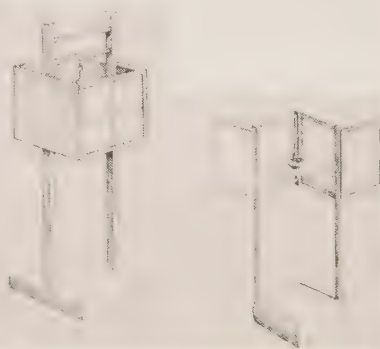
Japanese lighting follows more or less the same pattern as Chinese. Before kerosene lamps and electricity were introduced it was of a very primitive form. There are descriptions of the great difficulties of students studying the classics by the feeble light of the small, flickering wicks of the saucer oil lamp or the dim and unsteady flame of a vegetable wax candle probably

made all the more feeble by being inside a paper lantern. It is told that, in the early days, devout students of the Chinese classics were accustomed at night to read a single character at a time by the dim light of a glowing coal at the end of an incense stick held close to the page.

As in China the two standard lights were the oil lamp and the candle. Japanese candles are made of vegetable wax having a wick consisting of a roll of paper. This wick, being hollow, is fitted to a sharp spur of iron about an inch long—in other words the same pricket-style holder that went out of style in Europe some centuries ago. At the top of the candle the wick projects in a firm, hard point. Sometimes the candles are ornamented, for example in the province of Aidsu they paint them bright colours with designs of flowers or birds. Candles are used in the home in ordinary metal holders, iron or brass, in designs that look very much like those of medieval Europe. Candles are also used to light the colorful lanterns that are as popular in Japan as in China. They hang in the house or are carried about the streets by hand. Like the West, they use snuffers in the form of a blunt pair of tweezers.

Japanese lamps have remained in the same primitive form as the Chinese, that is the shallow saucer filled with vegetable oil with a wick that is a slender rod of pith lying against one side and held down at the bottom by an iron ring. The unburned part of the wick comes up the other side of the saucer and as the burning end is used up it is pushed along. The saucer itself sometimes rests in a disk or ring of iron which is suspended within a wooden frame covered with paper. The light from a lamp of this kind is so feeble that one can scarcely see his way about a room. There are other forms of lamps, one is a tall, lacquered stand with the saucer at the top. There are also plain iron lamps looking very much like the lamps of colonial America. There are a few pottery lamps used but they are not so common.

In the early days Japanese street light-



THESE SMALL standing lamps are called "andon" and were in common use in Japanese homes before the introduction of electricity.



BEAUTIFUL WORKMANSHIP in a Chinese bronze lamp made in approximately the year 25 A.D. It embodies an early sun legend concerning a mythical tree 100 miles high with ten suns on its boughs. (Photograph courtesy of the Royal Ontario Museum.)

ing consisted of frail paper lanterns hung on short slender posts at the gateways of buildings. An American traveller to Japan in 1885 was much impressed with the fragile beauty of these lights. He writes, "these frail objects, exposed as they are on busy thoroughfares, are perfectly safe. One is led to wonder how long such a delicate street lamp would remain intact in our American street."

The Japanese invariably used to carry lanterns when they walked out at night. On the outside of the lantern would be painted the crest of the family or the name of the house. The same American traveller also noted the very amusing sight of a number of firemen on the top of a burning building holding lighted lanterns with one hand and attempting to put out the fire with the other. These household lanterns were folded up when not in use and neatly stored away on a special shelf in the front hallway.

One of the most picturesque and novel
(Continued on next page)

Sees Graduate Engineer Like Man With New Car

"If you maintain your interest and your willingness to learn, your qualifications will increase with your experience; but if you sometime assume that you have learned it all, at that point your professional career will have reached its peak and worse than that, you will have lost the keenness which should be your legacy to the next generation of junior engineers in training."

This sound advice was given by A. H. Frampton, assistant electrical engineer of The Hydro-Electric Power Commission of Ontario, when addressing fifty junior engineers who recently joined the staff of the Commission and who are now undergoing a two-year course of training. He went on to illustrate this point by a quotation by Sir Richard Livingstone on education: "The graduate who leaves the University is like a man equipped with a new motor car, which needs to be run-in but otherwise is in excellent condition for the road. But if he uses it for years without thorough periodic overhauls, it will cease to be a useful means of transport and probably become a danger to the public."

Definitions Of Engineer

Mr. Frampton proceeded to define just what the term "engineer" meant. It has been described in various ways, he said, from high-sounding definitions referring to the control of the forces of nature, to the simple one, originated by Dr. W. E. Wickenden, president of the Case School of Applied Science, that he is one who finds answers to the three questions—does it work?—does it pay?—is it safe? He said that taking the latter definition, it must be kept in mind that only experience and training could give an engineer the authority to answer these questions with assurance. But one thing to keep in mind was that it is never a disgrace to admit you don't know something, and a polite denial of knowledge is much to be preferred to a random guess.

To answer the question "Does it work?" he said, implied technical knowledge and a broad background of experience.

"Does it Pay?" involves a knowledge of the governing economic factors. In industry such a question might be quite simple, in the Commission's operations, where the profit motive does not exist, it may be more complicated.

"Is it safe?" he continued, is a question which may have a wide meaning. Is it safe against the hazards of nature or against the emergency loadings it may be required to withstand? Is it safe to operate and is it safe from the standpoint of the general public who may use it?

Mr. Frampton went on to explain some



A. H. Frampton

of the characteristics and qualifications that the Commission would be looking for in an engineer-in-training. Among them are certain physical qualifications including general health and physical vigour, neatness of appearance, manner and speech expressiveness. Also mental characteristics such as stability, alertness, initiative, patience, imagination or originality and a sense of humour; thinking ability as indicated by the selection of basic factors in a problem, reasoning from these factors and arriving at correct conclusions; knowledge, both technical and practical; thought expression both verbal and written, and instructional ability.

Interest In Human Affairs

He said that these qualifications would not be developed wholly either from previous training or from the course with the Commission but from their own efforts outside the daily sphere of activity. "I commend to you," he said, "an interest in the field of human affairs, because engineering work inevitably impinges on the everyday world; an interest in your technical and professional associations from which you will gain more, I am sure, than merely what you put in; and also an interest in the fields of those with whom your work brings you in contact, because a knowledge of, and interest in, the other fellow's problems serve to develop the spirit that makes co-operation not only possible but second nature."

The rest of Mr. Frampton's speech in-

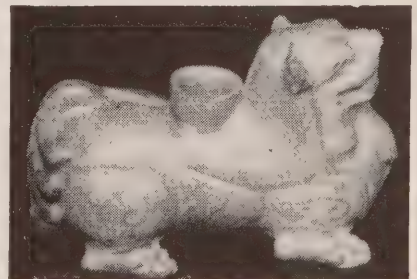
cluded a considerable amount of very practical information concerning the general plan of the course of training, the organization of the department of electrical engineering as well as some suggestion as to tackling some of the actual problems they would be asked to solve.

This group of young engineers, mostly ex-service men, has been selected from recent university graduates all across Canada. They have been taken on the regular staff of the Commission and will be put through a course that will include both instruction and practical work connected with the various phases of activity in each of the Commission's departments.

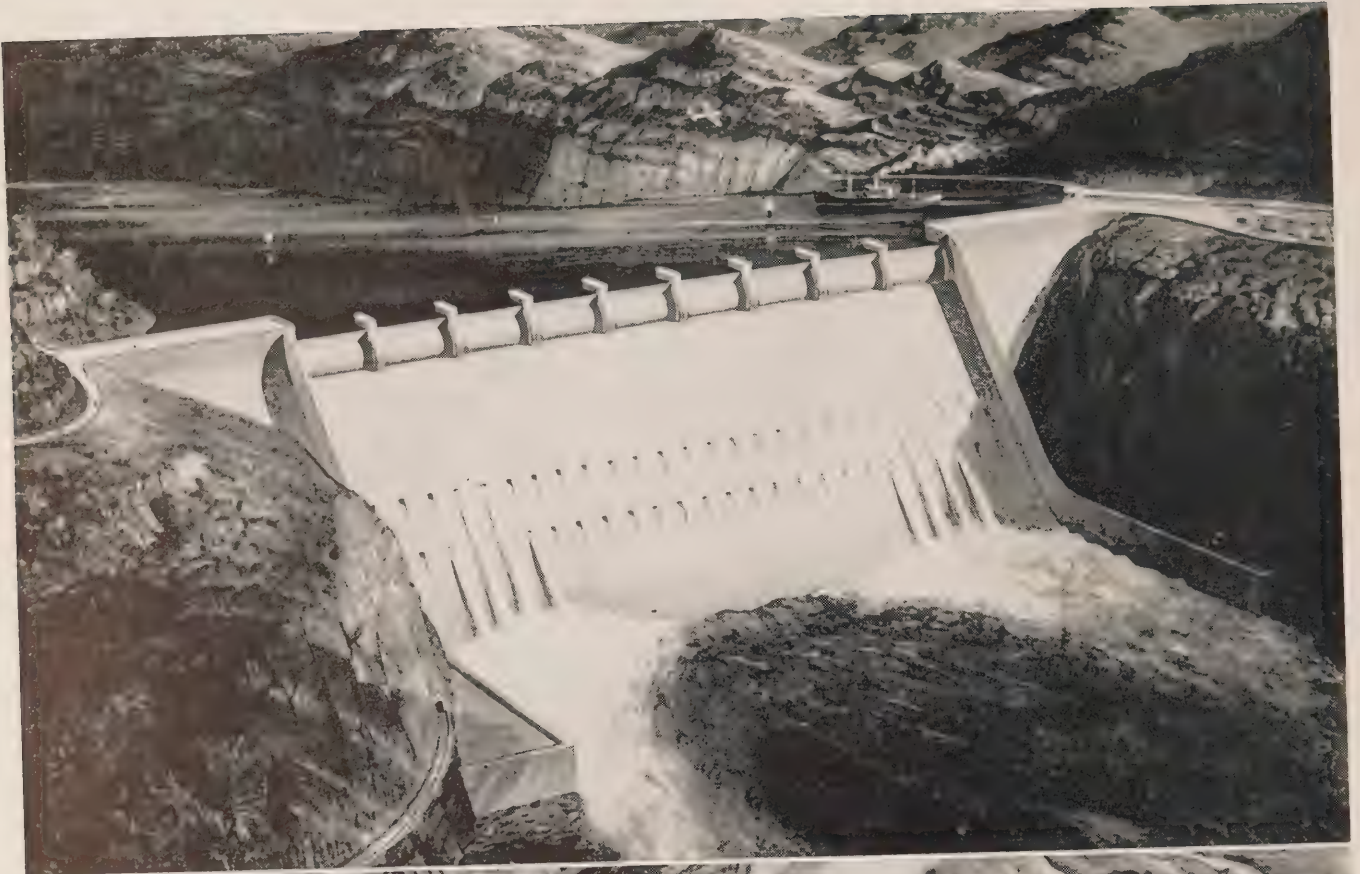
WHEN DAY IS DONE

(Continued from previous page)

lighting customs anywhere must be the Japanese use of fireflies at parties and festive occasions in tea gardens or in private homes. They would be used in cage lanterns or else released in large numbers to form a scintillating cloud of sparks. Firefly catching was a regular business. To the accompaniment of old folk songs girls pursued them with fans and then boys would catch them with wands with wisps of yarn attached. War-minded modern Japan has probably long ago discarded this delightful custom.



THESE TWO little Chinese porcelain dragons carry oil lamps on their backs. The lamp parts are both plain oil bowls without even a pinched part of rim to support the wick. (Photograph courtesy of the Royal Ontario Museum.)



A VISITOR FROM CHINA

From Kiangsu Province, China, comes Dr. Chung Ling Pien, whose name has been added to the list of distinguished visitors from other countries who, from time to time, come to observe and study the Hydro in Ontario.

Dr. Pien has been asked by the Natural Resources Commission of China to join the staff of engineers who are making the preliminary plans for the great Yangtze Valley Administration project. This paper work is to be carried on in Denver, Colorado, under the supervision of the U.S. Bureau of Reclamation, and Dr. Pien started his work there in the late summer. When the actual construction work begins he will return to China. This project, when completed, will be the largest power development in the world; it will be capable of generating 10,500,000 kilowatts of electricity and will supply electric power to 140,000,000 Chinese people, an equivalent to the whole population of the United States. At the same time it will enable 10,000-ton boats to sail upstream from Shanghai to Chung-king through specially-designed shiplocks and will irrigate a territory of 60,000,000 acres of farm land.

Graduate In Civil Engineering

Dr. Pien graduated in civil engineering in 1934 from the National Central University in Nanking. For several years he worked with the Kiangsu Province government in design and construction for irrigation projects. In 1937 he came to the United States and in 1941 got his Ph.D., from the University of Iowa in hydraulic engineering. His studies here were made possible by scholarships from Iowa University, Ching Hwa University and the China Foundation. After receiving his degree he worked with a number of engineering firms in different parts of the United States and last spring he resigned his job to take over this particular work for the Chinese government.

Able To Learn Much

As a visitor to Hydro, Dr. Pien finds much to interest him in a large public ownership system of this kind since in his own country the natural resources are owned by the government and are organized on a comparable basis. He says that thanks to the courtesy that has been



VISITING CANADA in connection with the Yangtze Valley Power project, which will be undertaken by the Natural Resources Commission of China, Dr. Chung Ling Pien has been spending some time with The Hydro-Electric Power Commission of Ontario, studying Hydro operations in this province. Later in the summer he will proceed to Denver, Colorado, where he will carry on planning work with the assistance of the U.S. Bureau of Reclamation.

extended to him here he will be able to learn much of practical value, in designing methods in particular, in his few months here. Feeling that Hydro should be better known in China, he is planning to write an article about it for publication in a Chinese engineering journal.

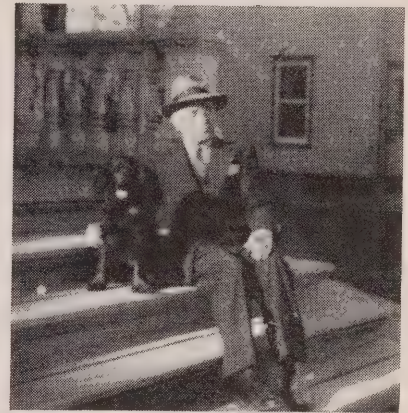
Engineering seems to be a natural interest for the whole Pien family. Dr. Pien's wife arrived in America a few years ago after a difficult and hazardous escape from Japanese-held territory and she has just now received her M.A. degree in mechanical engineering from the University of Michigan. Whether the fifteen-month old addition to the family has yet shown an aptitude for the profession, Dr. Pien says, is still a little doubtful!

30 YEARS WITH HYDRO

WILLIAM TAIT, superintendent of Picton Public Utilities Commission, who has just completed 30 years service with Hydro at Picton, came to Canada with his parents from Caithness, Scotland, when he was quite young.

The family made their home on Wolfe Island, near Kingston and Mr. Tait's first job was sailing on the Great Lakes. While sailing he put his spare time to such effective use that he qualified as a marine engineer.

In 1911 he moved to Picton to work as an engineer for the old power plant, and in 1916 he was appointed superintendent. Mr. Tait, in reminiscing, recalled



that in 1919, when Picton became "a member of the Hydro Family", the load was approximately 200 horsepower. Today, it is 1,800 horsepower. At that time the domestic rate was 7 cents per kilowatt hour for the first 60 hours and 3½ cents per kilowatt hour for additional power used. In 1936, the rate was 3-4/10 cents for the first 60 kilowatt hours and 1¼ cents thereafter, while the present rate is 2 cents and .08 of a cent for consumption over the 60 kilowatt hours. So far as commercial rates are concerned, in 1919 they were 14 and 7 cents; in 1936, 2¼ and 1 cent and today, they are 1.79 cents and .05 of a cent. In addition, the Hydro consumers of Picton have had returned to them no less than \$32,000, while \$11,500 has been rebated to the town of Picton.

Mr. Tait recalls that when the switch-over to Hydro was made, the late M. R. Allison was mayor of Picton and those on the commission were N. D. Gilbert and I. Frith Fraser.

WHEN THE Yangtze Valley Administration project is completed in about six years time, it will be the largest power development in the world, according to reports received by Hydro News. Two impressions of this project by an artist are shown on the left hand page. The upper illustration portrays how the Yangtze river power development will look when completed. The dam, it is stated, will be higher than the great Pyramids of Egypt. The lower drawing indicates how the power plant works will be set into the solid rock so that the switchyard will be the only equipment above ground. This Chinese project will be capable of generating 10,500,000 kilowatts of electricity and, at the same time, it will enable 10,000-ton boats to sail upstream from Shanghai to Chung-king through specially-designed shiplocks, while it will bring the benefits of irrigation to 60,000,000 acres of farm land.

REME



FROM H. C. MORE'S attic trunk came this shot of Hydro's soccer team, who were runners-up in 1921 for the Toronto and District League. You may recognize Art Frampton, Jack Pomeroy, Bill Armstrong, Ernest Steele and other men who are, or were, at one time Hydro employees. In explaining to Hydro News why they had not won the cup that year, Mr. More claimed that during the season they never all got out to practice at the same time.



A LOT of the men on the bridge. Many of the men appear to have been lost in the picture of the Ontario Hydro Rifle Club. The men from Hydro who were in the recent Home Guard and Air Raid Patrol. At noon they would board the



ONTARIO
MA

HYDRO NEWS

INDEX

JUNE, 1942 — DECEMBER, 1945

(inclusive)

In response to many requests, Hydro News has prepared this index of feature articles and news stories published between June, 1942, when the publication was first issued, and December, 1945. For the convenience of these readers and others who may be interested, this index has been compiled on a yearly basis.—The Editor.

HYDRO NEWS INDEX

1942

A

ISSUE

Acclaim Efficiency Of Hydro Methods (Meeting Of Administration And Accounting Committee Of A.M.E.U. At London)	November
Ambitious City (Hamilton's War Industries)	November
Appliance Hospital (Toronto Hydro Repair Dept.)	July

B

Barrett Chute (Completion Of Power Plant)	September
Big Eddy (General Information On Plant)	July
Bits And Pieces (Organizing Wartime Workshops)	June
Bits And Pieces (Hydro Machine Shop)	December

C

Concerning Conservation (Conservation Showcards)	November
--------------------------------------------------------	----------

D

Dangerous Ingenuity (Danger of Using Homemade Electrical Fixtures)	December
DeCew Takes Shape (Construction Of DeCew Development)	July

E

Every Little Helps (Power Conservation)	October
-----------------------------------------------	---------

F

Father Time On Tiptoe (Electric Clocks)	December
Further Cut Anticipated In Use Of Electricity (District No. 5 O.M.E.A. Convention At Dundas)	October

G

Go Fly A Kite (Niagara Weir)	September
------------------------------------	-----------

H

Hydro Helps House Windsor War Workers (Wartime Housing)	October
Hydro Helps Oshawa Keep 'Em Rolling (General Motors Plant)	December
Hydro Is Vital Force In Hastening Victory (Districts 2, 3 And 6 O.M.E.A. Conventions On S.S. Assiniboia In Georgian Bay, Port Arthur And Galt Respectively)	September
Hydro Marches On (Thirty-fourth Annual Report)	July
Hydro "Mounties" Hit Rural Trails (Meter Readers)	June

I

It Knows All The Answers (Network Analyzer)	June
---------------------------------------------------	------

L

Light Conditioning Can Conserve Power (Lighting And Conservation In The Home)	September
-------------------------------------------------------------------------------------	-----------

M

Modern Home Opened By North Bay Hydro (Opening Of New Office Building)	June
Municipalities and Consumers Lauded For Conservation Effort (District No. 4 O.M.E.A. At Toronto)	November

N

New Construction During Past Year (Article By Dr. Thomas H. Hogg Covering H.E.P.C. Operations During 1942)	December
------------------------------------------------------------------------------------------------------------------	----------

O

Ogoki Saga (Construction of Ogoki Diversion)	June
----------------------------------------------------	------

(Continued on next page)

HYDRO NEWS INDEX

(Continued from previous page)

P

ISSUE

Port Arthur Citizens Celebrate (Mortgage Burned)	July
Power Cut "Insignificant" To Other War Restrictions (District No. 1 O.M.E.A. Convention At Brockville)	October
Power For Victory (Address By Dr. Hogg At Eastern Ontario Municipal Electrical Association Convention At Brockville)	September
Preference Ratings (Wartime Priority Operating Forms)	November

R

Ready To Fight Fire And Bombs (Hydro's A.R.P.)	November
Regulations Will Affect "Power Shortage Areas" (District No. 8 O.M.E.A. Convention At Windsor)	August
Role Of Electrical Utility In Helping Conserve Power (Wartime Priorities)	August

S

Salvage (H.E.P.C. Bloor Street Stores)	July
Says Conservation Is Patriotic Duty (District No. 7 O.M.E.A. Convention At London)	October
Selection Of Switches For Continuous Loads (Heating Of Fused Switches)	December
Smiths Falls Hydro Now Free Of Debt (Smiths Falls Pays Final Debenture)	August
Storm Troops (Hydro Linemen)	October

T

Talking About Priorities (Wartime Priorities and Materials)	June
Talking About Priorities (Wartime Priorities and Materials)	July
The Price Of Carelessness (Damage To Poles And Lines)	July

U

Urge Local Commissions To Act As Power Wardens (Power Conservation Campaign)	October
------------------------------------------------------------------------------------	---------

W

Wartime Systems (Conservation Of Materials)	December
---------------------------------------------------	----------

1943

A

A Call At Port Arthur (Port Arthur P.U.C.)	December
A Call At St. Kits (St. Catharines P.U.C.)	May
At The Hydro Helm In Toronto (T.H.E.S. Commission)	January
At Waterloo (Waterloo P.U.C.)	August
A Thousand More Hydro Farms (H.E.P.C. Rural Extension Programme)	June-July

C

Combined Operations (Electricity On The Farm)	August
Concerning Concrete (H.E.P.C. Laboratory)	August
Conservation Of Materials (Talk By A. A. Moline At A.M.E.U. Convention)	February
Continue Power Saving Convention Is Advised (Speech By Dr. Thomas H. Hogg At O.M.E.A.-A.M.E.U. Convention)	February
Convention Highlights (Addresses And Resolutions At O.M.E.A.-A.M.E.U. Convention In Toronto)	February

D

Debate Pension Problems At District 5 Convention (O.M.E.A. At Paris)	November
Des Joachims Site Is Well Situated In Relation To Existing Load Centres	April
District No. 8 Commended At O.M.E.A. Convention (Report On Efforts To Standardize Electric Range Switches)	February

E

Electricity In Music (Organ, Novachord, Solovox, Theremin, Stringed Instruments)	June-July
----------------------------------------------------------------------------------------	-----------

(Continued on next page)

HYDRO NEWS INDEX

(Continued from previous page)

ISSUE

F

Figures Tell Story of Growing Number of Domestic Users (Domestic Service Tabulations Covering Period 1914 to 1941)	January
Former Hydro Employees In Government Services	April
Fort Of Freedom (Opening Of New Unit At DeCew Falls Plant)	November

G

Galt Pays Off And Celebrates (Final Debenture Payment)	March
Girls Go To It (Girls At Hydro Laboratories)	January
Going Great Guns (Peterborough's War Industries)	March

H

Handmaiden Of Healing (Hydro In The Hospital)	October
Haven Of History (Historical Background Of DeCew Falls Plant—John DeCou)	November
Historic Kitchener (Kitchener P.U.C.)	August
Huron's Golden Gate Is Busy Ontario Centre (Goderich P.U.C.)	March
Hydro Builds For Victory (Generating Plants—Big Eddy, Barrett Chute, Bark Lake, Ogoki River Diversion, DeCew Falls And Ear Falls)	May
Hydro Community At Cameron Falls	September
Hydro Girls Train As Nurses Aides (Red Cross Emergency Nursing Reserve)	April
Hydro Goes To School (Belleville P.U.C.)	April
Hydro Substations At St. Catharines	May
Hydro's In The Boat Race (Toronto Shipyards)	January
Hydro's Robot Power Plants (Automatic Stations)	February

I

In 1942 Ontario's 560,000 Hydro Users Consumed 1,224,000,000 Kilowatt-Hours (Domestic Service Tabulations Covering Period 1914 to 1942)	September
-----------------------------------------------------------------------------------------------------------------------------------------------	-----------

L

Lights Out (Toronto Hydro Street Lighting)	August
Line To Steep Rock Is Opened Notable Wartime Achievement (Transmission Line In Service November 28, 1943)	December

M

McKillop Sees Meeting As Aid To War Effort (Speech By A.M.E.U. President)	February
Municipalities Advised To Build Up Reserves (District No. 2 O.M.E.A. Convention At Owen Sound)	September
Must Maintain Restrictions To Meet Winter Peak Loads (Eastern Ontario O.M.E.A. Convention At Kingston)	November

N

New System of Meter Reading Outlined At A.M.E.U. Meeting (Convention At London)	November
Noteworthy Achievement Recorded By Bowmanville (Final Debenture Paid)	March
Nylons At War (Production Of Nylon)	December

O

Ogoki Opening (Official Opening Ogoki Diversion)	September
O.M.E.A. Meets At Kitchener (District No. 6 Convention)	October
On Duty For The Duration! (H.E.P.C. Appliance Survey)	May
Onward To The Ottawa (Development Of Seven Power Sites Along International Section)	March
Over And Under (Dredge, Cofferdam, Weir At Twelve Mile Creek)	October

P

Port Arthur-Steep Rock Line To Deliver Power This Month (Announcement By Dr. Thomas H. Hogg At District No. 3 O.M.E.A. Convention At Fort William)	November
Post-War Planning Discussed At District 5 Summer Meeting (O.M.E.A. Convention At St. Catharines)	June-July
Powering Sub-Chasers (Hydro Machine Shop)	June-July
Power Will Be Asset In Post-War Period (Speech By Dr. R. C. Wallace At O.M.E.A.-A.M.E.U. Convention)	February
Project To Provide 400,000 Horsepower (Talk On Proposed Power Development at Des Joachims By Dr. Thomas H. Hogg At Electric Club Of Toronto)	January

(Continued on next page)

HYDRO NEWS INDEX

(Continued from previous page)

ISSUE

R

Rural Hydro Consumers To Have Uniform Rate (Rural Rates Effective January 1, 1944) December

S

Sarnia's New Home (Opening Of New Building) June-July
 Scarborough Bluffs (Scarborough P.U.C.) October
 Spirited Debate Started By "Flat Rate" Sponsors (District No. 8 O.M.E.A. Convention At Windsor) December
 Steep Rock (Draining Of Steep Rock Lake) June-July

T

Taken For A Ride (Niagara Weir) December
 Talking About Priorities (Wartime Priority Regulations) June-July
 The Name Of Belleville Linked With The Visit Of Lady Gore (Belleville P.U.C.) April
 The Remarkable Mr. Kelly (J. B. Kelly, Goderich) March
 This Is Paris (Paris P.U.C.) December
 Town Of Aurora Takes Over Operation Of Hydro System (Contract Signed With H.E.P.C.) May

U

Urges Modification Of Power Regulations (Speech By K. A. Christie, K.C., At O.M.E.A. Convention) February

W

Water And Power (Article Based On Address By Otto Holden At Queen's University) June-July
 Watt's Horsepower (The Why And How Of Horsepower) February
 When The Lights Went On (Canada's First Industrial Lighting Plant At Cornwall) April
 Worst Storm In 50 Years (Snow And Sleet Storm Around St. Lawrence Country On December 29, 1942) January

1944

A

A Fourth Unit For Alexander (Alexander Landing Generating Station) July
 A Visit To Lindsay (Lindsay P.U.C.) May
 A World Of Wizardry (Electronics) February
 Announcements On Hydro Policy Discussed At District 5 Meeting (O.M.E.A. Convention At Brantford) November
 At Etobicoke (Etobicoke H.E.C.) July
 At Fort William (Fort William H.E.C.) January
 At The Annual Meetings (O.M.E.A. and A.M.E.U. Convention At Toronto) March
 At The Capital (Ottawa H.E.C.) August

B

Better Things Done And In Better Ways (Talk By A. A. Turnbull at A.M.E.U. Convention At Toronto) March

C

Canada's London (London P.U.C.) June
 Canyon Colony (Abitibi Canyon) November
 Co-operation Is Seen As Hydro Corner Stone (Speech By K. A. Christie, K.C., At O.M.E.A. Convention At Toronto) March
 C.S.A. Service Now Embraces Materials And Processes (Scope Of Activities Enlarged) September

D

District No. 2 Meeting (O.M.E.A. Convention At Barrie) October
 Down Windsor Way (Windsor P.U.C.) February

E

East York Takes A Bow (East York H.E.C.) March
 Explains "Modern Magic" Of Dielectric Heating (Address By C. A. Scarlott At A.M.E.U. Convention At Toronto) March

(Continued on next page)

HYDRO NEWS INDEX

(Continued from previous page)

ISSUE

F

Father Of Hydro (Sir Adam Beck)	June
From Horses To Horsepower (Toronto Transportation Commission)	January

H

Harnessing Horsepower (Part One)	October
Harnessing Horsepower (Part Two)	November
Harnessing Horsepower (Part Three)	December
Hen Party (Chicken Hatchery At Kettleby, Ontario)	April
How It Happened (Cycle Frequency)	February
Human Life Endangered (Hazards Of Using Unapproved Electrical Equipment)	August
Hydro's Post-War Position And Plans Outlined At District No. 1 Meeting (O.M.E.A. Convention At Kingston)	November
Hydro's Rural Ambassadors (Rural Superintendents)	April
Hydro Takes Over Operation Of Caledon Electric Plant (Purchase)	December

I

In The Balance (H.E.P.C. Laboratory)	December
It Nails The Nails (Magnetic Nail Picker)	May
It's In The Bag (H.E.P.C. Mailing Dept.)	September

J

John Mills "Goes To Bat" On Everyday Electronics (Address Given At O.M.E.A.-A.M.E.U. Convention At Toronto)	March
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L

Lakehead Convention (District No. 3 O.M.E.A. Convention At Port Arthur)	October
Light Atmosphere In The Home (Illumination For The Home)	January
Looking In At Stratford (Stratford P.U.C.)	December
Low-Cost Power Seen As Basic Factor In Economic Development Of Dominion (Talks By Dr. Thomas H. Hogg and Hon. George H. Challies at Larder Lake, Ontario)	July
Lowly Pioneers (Origin of Niagara Falls)	July

M

Machines With A Mentality (H.E.P.C. Accounting Dept.)	January
Meters On The March (H.E.P.C. Laboratory)	August
Mimico's In The Picture (Mimico P.U.C.)	April

O

On Their Metal (Dominion Arsenal At Lindsay)	May
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P

Presents Post-War Picture (Address By Ralph E. Freeman At O.M.E.A.-A.M.E.U. Convention At Toronto)	March
Post-War Load Building (Article by L. S. Treuge, Windsor Utilities Commission)	May
Post-War Load Building (Second Article By L. S. Treuge)	June
Post-War Load Building (Third Article By L. S. Treuge)	July

R

Rain Or Shine (Meteorological Service of Canada)	June
Rural Electrification As Post-War Project	August

S

Says Hydro To Play Major Role In Building Tomorrow's Canada (District No. 4 O.M.E.A. Convention At Toronto)	December
Says Ontario Ready To Proceed With St. Lawrence Development (Speech By Prime Minister George A. Drew At O.M.E.A.-A.M.E.U. Convention At Toronto)	March
Special O.M.E.A. Meeting Endorses Amalgamation (Amalgamation Of Niagara, Georgian Bay And Eastern Ontario Systems)	April
Spotlight On Bowmanville (Bowmanville P.U.C.)	September
Still Better Rural Service (Speech By Hon. George H. Challies to Rural Superintendents In Toronto)	April
Suggests Annual Crop Basis For Replenishable Resources (Conservation Stressed By Dr. Thomas H. Hogg At Districts 7 and 8 O.M.E.A. Convention At London)	November

(Continued on next page)

HYDRO NEWS INDEX

(Continued from previous page)

	ISSUE
T	
To Barrie (Barrie P.U.C.)	October
U	
Urge Action In Standardization Of Switches On Electric Ranges (District No. 6 O.M.E.A. Convention At Stratford)	October
V	
Voice Of Hydro (H.E.P.C. Communication System, Telephones, etc.)	September
W	
Would Have Hydro Consumers Sign Standard Credit Card (A.M.E.U. Convention At London)	November
Y	
Yardsticks Of Accuracy (H.E.P.C. Laboratory)	May
1945	
A	
Advantages Of Hydro Service Extended With Purchase Of Northern Properties (Purchase Of Northern Ontario Power Co.) ..	January
A Great And Gallant Neighbour Passes (President Franklin D. Roosevelt)	April
A-Tisket A-Tasket (H.E.P.C. Purchasing Dept.)	December
B	
Before Niagara Was Harnessed (Niagara Falls In 1853)	May
Bright Lights (Manufacture Of Hydro Lamps)	February
C	
Calls For Speedy Action On The St. Lawrence Project (Address By Senator George A. Aiken At Toronto Electric Club) ...	March
C-F-Three-H Calling (Frequency Modulation T.H.E.S.)	July-August
Chapter On Chatham (Chatham P.U.C.)	June
Commission Opens School For Training Of Linemen (H.E.P.C. Rehabilitation of Servicemen)	September
Come Into The Garden (Planning The Home Grounds By Leon Van Cleemput)	April
Come Into The Garden (Summer Care By Leon Van Cleemput)	June
Come Into The Garden (Mid-Summer Gardening By Leon Van Cleemput)	September
Come Into The Garden (Autumn Gardening By Leon Van Cleemput)	November
D	
Day-Zhoah-Shehym* (Pronunciation Of Des Joachim By Cecil Carrick)	December
E	
E.E.A. Sets Fine Record In Accident Prevention (30th Annual Report Of Electrical Employer's Association)	May
Empire Of The North (Ontario's Mining Area) (First Article)	January
Empire Of The North (Second Article)	February
Empire Of The North (Third Article)	March
Employee Training Important In Public Relations Programme (A.M.E.U. Convention At London)	November
F	
Five Year Rural Programme Ready For Post-War Period (H.E.P.C. Rural Programme)	April
Further Rural Rate Cut After May 1 (Rural Rate Reduction)	April
G	
Georgian Bay Convention (District No. 2 O.M.E.A. Convention At Thunder Bay Beach)	October
Grid System Blessing To Britain During Blitz And V-Bomb Barrage (Interview With Harold Hobson Of Central Electricity Board)	July-August
H	
Harnessing Horsepower (Part Four)	January
Harnessing Horsepower (Part Five)	February
Harnessing Horsepower (Part Six)	March
Harnessing Horsepower (Part Seven)	April
Harnessing Horsepower (Part Eight)	May

(Continued on next page)

HYDRO NEWS INDEX

(Continued from previous page)

ISSUE

H

Harnessing Horsepower (Part Nine)	June
Harnessing Horsepower (Part Ten)	July-August
Harnessing Horsepower (Part Eleven)	September
Huntsville (Huntsville P.U.C.)	September
Hydro's Five Year Rural Plan To Help Handicapped Farmers (H.E.P.C. Rural Programme)	July-August
Hydro To Build New Power Plants As Quickly As Material Available (Address By Dr. Thomas H. Hogg At Eastern Ontario Municipal Electric Association Held At Kingston)	November

K

Knowledge Is Power (H.E.P.C. Library)	April
---------------------------------------------	-------

L

Light On Lighting (School Lighting)	May
Limestone City (Kingston P.U.C.)	May
Lots Of Pluck (Plucking Poultry By Electricity)	June

M

Meet In Hamilton On Day Citizens Welcome Crerar (District No. 5 O.M.E.A. Convention)	November
--------------------------------------------------------------------------------------------	----------

N

Niagara Frequency Change-over Being Studied By Commission (Districts 7 and 8 O.M.E.A. Convention At Sarnia)	November
North Of The Fiftieth Parallel (Hydro In The North Country, Part One)	December
North York (North York Twp. H.E.P.C.)	March
Now It Can Be Told (Damage of British Power Plants)	September

P

Plan Annual \$18,000,000 Programme For Maintenance, New Construction (District No. 3 O.M.E.A. Convention at Fort William)	October
Prophecy In Bronze (Copper Tokens Of Upper Canada)	June

R

Renfrew And Almonte In Hydro Family (Signing Of Contracts)	February
Renfrew Joins Hydro Family (Renfrew H.E.C.)	July-August
Re-Organization of Key Personnel (Re-Allocation Of Duties In H.E.P.C.)	January
Ruined Germany A Patchwork Quilt of Strangely Assorted Patterns (Letter From Sgt. E. P. Pritlove)	October

S

Saying It With Turkey (Use Of Electricity In Turkey Raising)	October
"Secin's Believin'" (Open House at H.E.P.C. Laboratory)	March
Sees India On Threshold Of Great Expansion Era (Electrical Development In India by Subramania Swayambu)	October
Sees Load As Indication Conversion Going Ahead (Dr. Thomas H. Hogg And W. Ross Strike, K.C., Address District No. 6 O.M.E.A. Convention At Kitchener)	November
Stormy Weather (Toronto's Blizzard Of December, 1944)	January
Street Lighting For Tomorrow (Post-War Street Lighting)	May

T

Teacher Recalls Experiences In Hydro Colony At Abitibi (Abitibi Canyon School)	September
They Came And Saw (Open House At H.E.P.C. Laboratories)	January
Tomorrow's Blue Heavens (Post-War Homes)	April
Two Engineers From India, Study Hydro Methods Here (S. A. Quader and Subramania Swayambu)	September
Trollhatten-Rjukan (Power Plants In Norway And Sweden)	June

W

War Birds (War-Time Use Of Pigeons)	June
Windsor Hydro Sells Equipment Now: To Make Delivery When Manufactured (Windsor P.U.C. Load Building Plan By L. S. Treuge)	October
Woodstock (Woodstock P.U.C.)	December
\$200 Million Programme Is Launched By Hydro (H.E.P.C. Post-War Expansion Programme)	December

MBER ?



CHAMPIONS OF the Toronto Industrial Association Junior Hockey League, the Ontario Hydro-Electric Club's team posed for this picture early in 1925. Included in the picture are Herb J. Hill, Lee Statham, Wilf Powell, Orvil Johnston, Joseph Hillier, who was the club president that year, C. E. Hanes, Ross Heath, W. J. Williams, James Simpson, Ross Stephen and Roy Taylor, who has one of the original prints hanging in his rumpus room.

gone under the
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e still with the Commission,
till others are deceased. The
taken outside the University Armouries in 1915,
an organization which would correspond to our
ed twice a week after work, and Saturday after-
ng Branch Ranges for rifle instruction.



RIFLE CLUB
1915

A CALL AT CHESLEY

About the year 1854, sturdy pioneers visited the land on which the picturesque town of Chesley now stands. Some of these early settlers started clearing their forest lots the following year but, actually, little progress was made until 1858, when Adam Scott Elliot, a native of Hawick, Scotland, who is credited with being the founder of Chesley, purchased two lots on the river front for the purpose of erecting mills and utilizing the water power of the river. In 1859 he had a sawmill, and the following year a small grist mill, which is still in the same family and still grinding. This grist mill has since been enlarged and is now using Hydro power.

Hydro had its inception in this friendly

community in 1916, and like all other Hydro municipalities, Chesley has materially benefitted from low-cost electrical energy. The total load at that time was 119 horsepower, while today it is in the neighbourhood of 700 horsepower, serving 460 domestic, 96 commercial and 22 industrial consumers over a network of seven miles of distribution lines.

Since the inception of Hydro in this town of some 1,800 inhabitants, there has been a steady reduction in the cost of service to consumers. In 1917, with an average domestic monthly consumption of 12 kilowatt-hours, the average cost was 8.2 cents per kilowatt-hour. At the present time the average monthly consumption of domestic consumers is 131

kilowatt-hours, and the average net cost per kilowatt-hour is 1.4 cents.

First Hydro Commission

The first Hydro commission in this municipality comprised: Mayor M. A. Halliday and C. P. Wilkins, commissioners; H. S. Sanderson, treasurer, and C. J. Halliday as chairman, which post he has retained ever since. Mr. Halliday is a well-known figure in business as well as municipal affairs, and ranks as one of Chesley's Hydro pioneers. Noted for his enterprise and business acumen, he has done much in furthering the industrial interests of the town.

The sound financial programme which has been followed throughout the years has resulted in this system being entirely free of debt, their final debenture

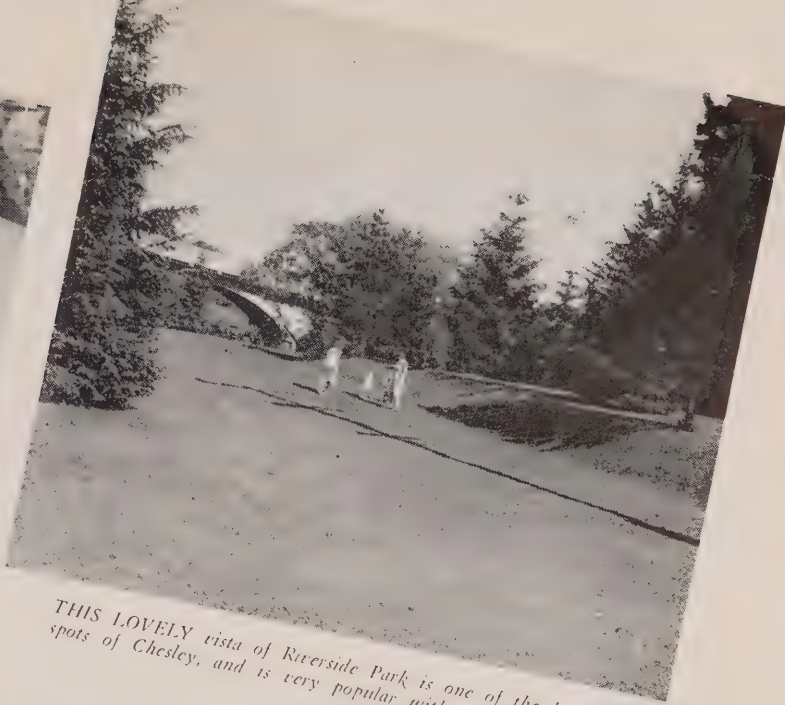
(Continued on page 22)



THIS IS the outside of the Chesley Public Utilities' office showing Miss Hetherington, assistant to the secretary-treasurer, entering. At the back of the office are two prison cells where vagrants are sometimes "overnight guests" of the town. They also have a very modern fire truck garaged in another section of the building.



HYDRO NEWS visited the news office of the Chesley Enterprise and snapped this one of the linotype operator, while George W. Grubb, secretary-treasurer of the Chesley Public Utilities Commission, looked on.

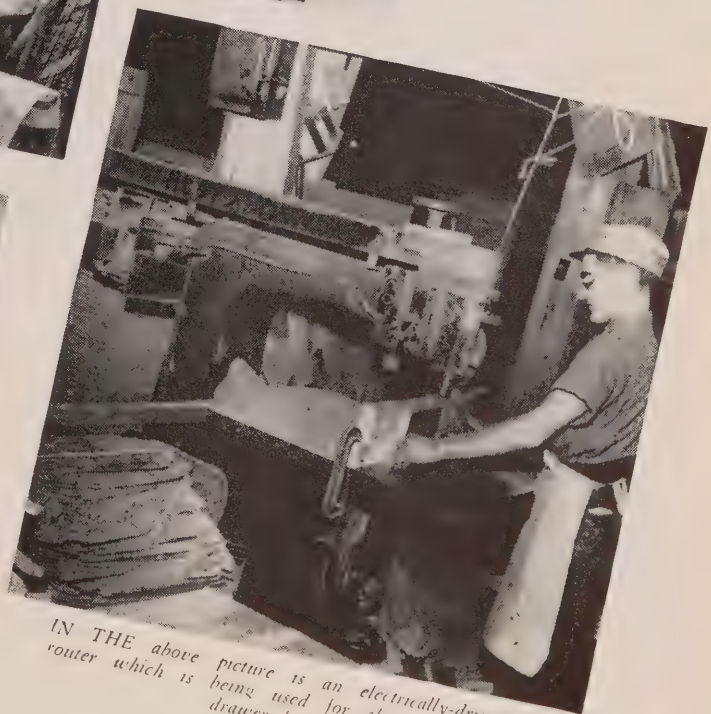


THIS LOVELY vista of Riverside Park is one of the beauty spots of Chesley, and is very popular with young and old.



THIS ILLUSTRATION, taken at the recently-established ladies' rainwear plant, shows some of the operators at their electrically-driven sewing machines. This bright, airy factory is equipped with modern fluorescent lighting.

THIS YOUNG lady (lower left) is evidently "happy in the service." When this one was snapped she was busily engaged in sewing a time green raincoat.



IN THE above picture is an electrically-driven router which is being used for shaping dresser drawer fronts.

DOWN THROUGH THE YEARS

ELECTRICAL HISTORY

PART 6

By Herbert C. Powell

This series of Electrical History started in Hydro News in the March 1946 issue. We have been looking into the lives and discoveries of pioneers of electrical science, beginning in the year 1600 in the time of Queen Elizabeth. This study brought us from Great Britain to United States. In this Part 6 we now look into the early electrical history of Canada. Many interesting stories can be told about the early electrical achievements of outstanding men in Canadian towns and cities.

Let us begin with the stories of three men:

Telegraph—Henry P. Dwight, 1828-1912, 84 years.

Telephone—Alexander Graham Bell, 1847-1922, 75 years.

Electric Light—John Joseph Wright, 1850-1922, 72 years.

The lessons to be learned from these three men are that they selected a noble service for their fellow men; they worked long hours; studied at night; accepted responsibilities of leadership and management; helped and trained others to success.

Father Of Canadian Telegraphy

Henry P. Dwight, the Father of Canadian Telegraphy, who was born in 1828 in the United States, came to Canada in 1847 as a trained telegraph operator at the age of 19, less than one year after the first telegraph line was opened in Canada. His parents died leaving him a useless farm, so he entered the telegraph business in Oswego, New York, and soon became an expert operator. In 1847 he started with the Montreal Telegraph Company, in charge of the office at Belleville, Ontario. In 1850 he was sent to Montreal. Later in the same year he was sent to Toronto as superintendent of the western area.

Became President And Manager

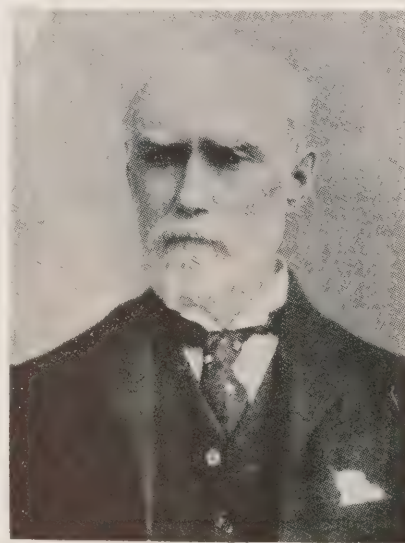
In 1881 he was made manager of the newly organized Great North Western Telegraph Company. In 1893 he became president and manager of the company. He resigned in 1903 as manager in favour of Isaac McMichael, but continued as president until his death in 1912 at the age of 84. During his lifetime he helped young men to study and advance, and assisted in every way the promotion of

electricity. He was among the first in Canada to have telephone and electric light in his home. He resided in Toronto for 62 years, but the nature of his duties required a vast amount of travel, enduring extreme hardships and difficulties, before roads and railroads were built.

One Hundredth Anniversary

The year 1946 is the one hundredth anniversary since the first telegraph line in Canada was opened December 19, 1846, between Toronto and Hamilton, just two years after Samuel Morse started his first telegraph line in United States in 1844. The name of the first telegraph firm was the Toronto, Hamilton, Niagara, St. Catharines, Electromagnetic Telegraph Company.

In 1847 there was another firm called the Montreal Telegraph Company, which



Henry P. Dwight

bought the Toronto, Hamilton, Niagara Company in 1852. In 1871 the Dominion Telegraph Company started as a competitor to the Montreal Company. Later, in 1881, both of these companies were absorbed by the Great North Western Telegraph Company. Another competitor entered the field in 1886—the Canadian Pacific Telegraph System, which is still operating. In 1915 the Canadian Northern Railway took over the Great North Western Telegraph Company, but in 1918 the Canadian National Railway absorbed the Canadian Northern Railway, and the telegraphy is now in the Cana-

dian National Telegraph System.

Alexander Graham Bell was the inventor of the telephone. He came to Brantford, Ontario, in 1870 at the age of 23, with his father from his birthplace, Edinburgh, Scotland. His father was a specialist in teaching speech to the deaf and dumb in a School at Brantford. The son went to Boston, Massachusetts, to teach his father's system, and became professor of vocal psychology in 1872 at Boston University. He spent his summer vacations at his father's home. It was during his vacation of 1874 in Brantford that the idea of the telephone was put in model form. A copy of this model and many other pieces of equipment, both antique and modern, may be seen at the Bell Homestead museum in Brantford, which is open to the public.

Great Events In Telephone History

It is only seventy years, 1876-1946, since the two great events in telephone history occurred. It was on March 10, 1876 in Boston, that the first sentence was sent by voice over wire, when Alexander Graham Bell spoke to his mechanical assistant, Thomas A. Watson. This message was, "Mr. Watson, come here, I want you." On August 10, 1876, the first long distance telephone message was sent from Brantford to Mr. Bell in Paris, Ontario, about 8 miles over a telegraph line. The Telephone Pioneers on August 10, 1946, erected a memorial plaque in Paris, Ontario, on the site where the message had been received seventy years before.

The Bell memorial, designed by Walter S. Allward, was unveiled in 1917 in the center of Brantford, in remembrance of Mr. Bell's achievements. Brantford is called the Telephone City, the birthplace of the telephone.

Telephone Invented

Bell and Watson on June 2, 1875, discovered, in Boston, the basic idea that a current of electricity could change in accordance with the changes in the sound of the voice or other sounds. Bell exhibited some models the following year at the Philadelphia Centennial Exhibition.

Mr. Bell was 27 years of age when he invented the telephone. He lived to see his invention spread throughout the world and become almost a business necessity. He died in 1922 at the age of 75.

The first telephones in Canada were operated in 1877 in Hamilton between



Alexander Graham Bell

the residences of Baker and Cory, and in Toronto between the residences and offices of Dr. A. M. Rosebrugh, an eye doctor, and Charles Potter, an optician.

Competition started early between three inventors of the telephone, Bell, Edison, and Elisha Gray. The disputes regarding priority of patents were carried into the law courts. This did not, however, prevent people from using the 'phones. Edison equipment was installed in Montreal, and Bell equipment in Toronto.

Separate Telephone Company Proposed

Charles F. Sise proposed a separate telephone company to overcome the struggles and competitions which the telegraph companies were having in 1878, 1879, 1880. In view of this the Bell Telephone Company was incorporated on April 29, 1880, and took over the telephone business of a number of companies, including the Toronto Telephone Dispatch Company located at Toronto, which started in 1878 and was taken over in 1881.

The Bell Telephone Company started a manufacturing department in 1882 which later became the Northern Electric Company. In 1942 the Northern Electric Company celebrated its sixtieth anniversary, with a total of 23 distributing centers in Canada, and listing 70,000 items in its catalogue.

John Joseph Wright started the electric light industry in Toronto in 1881, having begun his electrical career in 1876 in Philadelphia with Elihu Thomson. For five years he travelled frequently between Toronto and Philadelphia. Born in 1850 at Yarmouth, England, he served an apprenticeship in machine work and engine building, then came to Toronto in 1870 at the age of 20, where he made machines and engines till 1876, when he went to the Philadelphia Centennial Exposition. (For story of Elihu Thomson,

see Part 5, Hydro News, July-August 1946, page 12.)

In 1876, in a Philadelphia High School, Elihu Thomson, age 23, and Edwin Houston, age 29, were both professors of science and were experimenting in electrical apparatus. Thomson was looking for a good mechanic to help him make electric apparatus, so he selected J. J. Wright, age 26, who was visiting the Exposition. Later Thomson and Wright joined with George S. Garrett in the manufacture of generators and arc lights in Garrett's machine shop. Demonstrations were given at Franklin Institute. One outfit was installed in Fuller's Bakery in Philadelphia; Mr. Wright operating the engine and boiler, and Mr. Thomson looking after the generator every night in a temperature of 140 degrees Fahrenheit. They invented the automatic control regulator to adjust the current when any arc light failed to operate. Mr. Wright erected the first arc light on the streets of Philadelphia and laid the first underground wires.

Successful Demonstration

Elihu Thomson was looking for financial backing to start up in business and heard of Frederick H. Churchill who lived in New Britain, Connecticut. Thomson and Wright found an unused basket factory in New Britain with an old boiler and engine, so they set up a ten-light generator and ten arc lights in the building in 1880. Thomson was very proud of Wright because the demonstration was a complete success. The patched up boiler did not blow up as might be expected; Wright burned up everything burnable around the place; the engine had to be carefully nursed to keep going; but the lights continued burning.

This happened on March 29, 1880, on Thomson's 27th birthday, and he received a wonderful birthday present in the form of a contract and financial support from Mr. Churchill. This resulted in the formation of the American Electric Company, and a factory in New Britain. Wright was very sorry to leave Thomson, but he left in 1881 to start up an enterprise of his own in Toronto.

In 1881 in Toronto, J. J. Wright built and installed Canada's first electric generating station, which was located in a factory northeast of the corner of King and Yonge Streets. He made the first Canadian electric generator in the shop of Firstbrooke Box Factory, King and Ontario Streets. He also made his own arc lamps, an improvement on the Hochhausen design. He made carbons from Gas Company's material, and copper plated them himself at 10 King Street East. He served arc lights in stores; Timothy Eaton being one of his first customers.

In 1879, two arc lights had already been

demonstrated in McConkey's restaurant on Yonge Street, Toronto. Mr. McConkey served free ice cream up to 9 o'clock, then charged five cents a dish after that hour.

Keen Competition

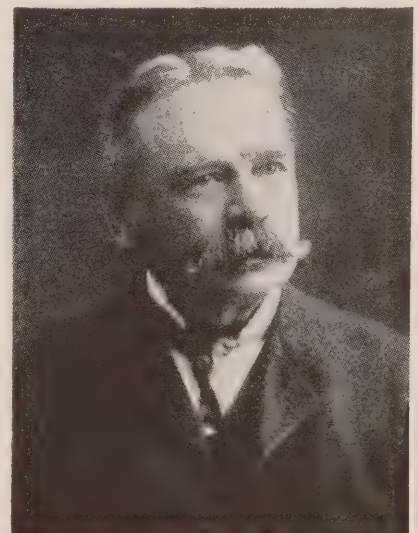
Competition was keen for street lighting in 1881 in Toronto. Five companies had sample arc lights on King Street at the same time: J. J. Wright and Company; Van Depoele of Chicago; R. J. Lunt of Dominion Electric Light Company; Sperry Electric (later Sperry Gyroscope); and D. Mitchell McDonald of Canada Electric Light Company. The city of Toronto did not begin paying for the street lights until May 1884.

The Toronto Electric Light Company was formed in 1883 by absorbing several of the competing companies. J. J. Wright served as manager of the T. E. L. for 25 years, until 1909, then continued as vice-president until he died in 1922 at the age of 72.

J. J. Wright and Van Depoele built the first electric railway in Canada in 1883 at the Toronto Exhibition, which operated about one mile from Strachan Avenue to Machinery Hall. It continued until 1892. It was on this railway that Van Depoele and Wright installed the first trolley pole, and worked out a number of new ideas for railway operation. Van Depoele died in 1892, at the age of 42, having made a good reputation as an electrical pioneer.

J. J. Wright also built the first Canadian made motor in 1883. On one occasion when this motor was grinding coffee in a store on Yonge Street, the switch, being

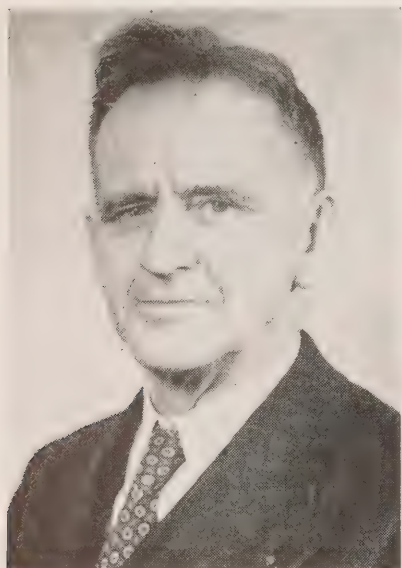
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John Joseph Wright



CHAIRMAN AT CHESLEY



CHARLES JOHN HALLIDAY, chairman of the Chesley Public Utilities Commission, needs no introduction to Hydro circles, as his name is synonymous with Hydro throughout the Province.

As early as 1914, when he was mayor, he was a pioneer in bringing Hydro to Chesley. And in 1916, when Hydro had its inception in this town, Mr. Halliday was made chairman of the local commission, which office he has held ever since. He was president of the Engineering Association when it was merged with the Georgian Bay Municipal Electric Association, and he has been closely connected with the Ontario Municipal Electric Association since its inauguration. From 1906 to 1914, he was a town councillor, and from 1914 to 1918 he occupied the mayor's chair.

Born at Chesley in 1876, he attended public and high schools there. In spite of his many and varied interests, he manages to find time to go boating, fishing and do some boat building.

Mr. Halliday recalls with pride, that his father, Mr. D. M. Halliday, was one of Chesley's pioneers, having been one of its first merchants. Later, he was postmaster for twenty years and was a strong supporter in the campaign for bringing the Grand Trunk Railway to Chesley.

BUSY GEORGE GRABB

No one could deny that GEORGE W. GRABB is a busy man. For the past seventeen years he has been secretary-treasurer and superintendent of the Chesley Public Utilities Commission, and is also the town clerk, treasurer and general town supervisor.

Born at Listowel, Ontario, in 1885, he attended public and high schools there, and from 1922 to 1928 he was a member of the Chesley town council.

While at school, Mr. Grabb enjoyed playing baseball, but now his principal interest is the promotion of civic enterprise, although he occasionally finds time to engage in horticultural activities.

MAYOR TOVELL



VICTOR GEORGE TOVELL, who was born in Guelph in 1895, and who has served six years as a councillor, is now in his first term of office as mayor of St. Marys. A graduate of St. Marys High School, Mr. Tovell received his Pharmacy degree from the University of Toronto, after being honourably discharged from the Canadian Army as a sergeant at the conclusion of the First World War.

Along with his civic interests and his electrical shop, Mr. Tovell raises all varieties of fruit, not so much from a monetary standpoint, but rather as a hobby.

MEET THE MAYOR



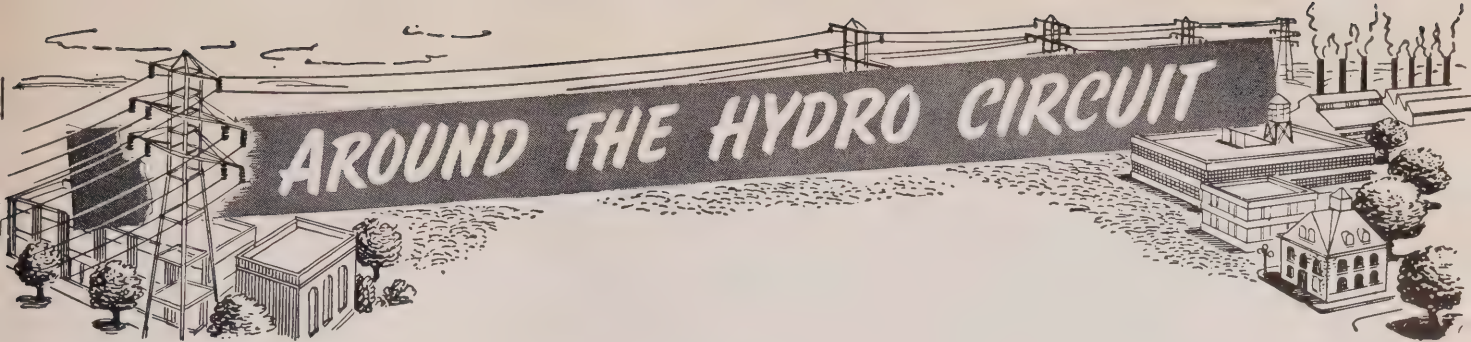
WILLIAM PETER KRUG, mayor of Chesley, has had considerable experience in municipal affairs and has been on the Chesley commission continuously since 1923. His long record of service started in 1920 when he was elected to council. In 1923 he was elected mayor, which office he held until 1933. From 1934 to 1943 he was a public utilities commissioner, and in 1944 he was re-elected mayor, which office he still holds.

Born and raised in Chesley, he attended public and high schools there. Later he went to the University of Toronto and graduated with a Bachelor of Arts degree.

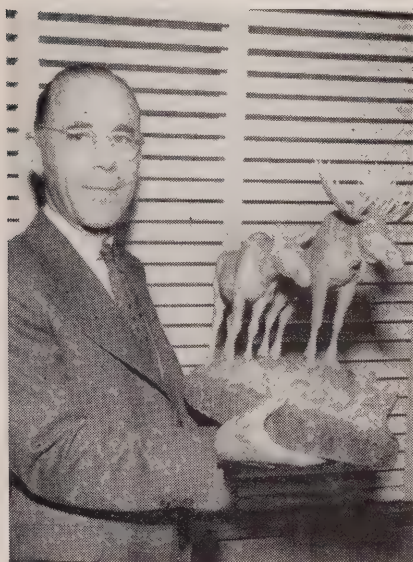
During the first world war, Mr. Krug was with the 20th Machine Company of the Canadian Siberian force which was stationed at Vladivostock, Siberia. During the second world war he served as chairman of the local Red Cross.

Mr. Krug is proud of the fact that his father and uncles have been closely connected with the industrial development of Chesley, and two of his uncles, William and Conrad Krug, have both served as mayors of the town.

When quiet-spoken mayor Krug has time off from his many duties, he enjoys gardening and amateur photography.



COMMISSIONER KRUG



WELLINGTON G. KRUG has been a commissioner on the Chesley Public Utilities Commission for the past eight years. He has also been a member of the Board of Education for sixteen years, and has served as chairman.

A native of Chesley, he attended the public and high schools there, and later spent two years at the University of Toronto.

Mr. Krug takes great pride in the appearance of his office, which has recently been finished in plywood. In the illustration above he is holding a bull moose and cow which is carved out of basswood. This attractive ornament generally stands on his office mantelpiece.

Sixty years ago, Mr. Krug's ancestors founded the Krug Brothers Company Limited, which gave Chesley the distinction of being one of the first communities in Western Ontario to become a furniture manufacturing centre. His father, Conrad Krug, was the first mayor of the town, and during his term of office the water-works system was installed.

When given an opportunity, commissioner Krug enjoys travelling, and his favourite sports of golf and fishing.

ST. MARYS CHAIRMAN

Chairman T. H. DOBSON, has served on the St. Marys Public Utilities Commission for eight years. He was raised in the Maritimes where he had the reputation of being a scrappy ball player, and by his own admission was marble champion of his town.

During the First World War, Mr. Dobson was attached to the merchant marine, and shortly after being demobilized established himself in St. Marys in the garage business.

Raising horses is a special hobby with him, and both he and his wife are well known for their able handling of spirited steeds.

RAY PFAFF



RAY PFAFF, manager of St. Marys Public Utilities Commission, began his career with the Delhi Light and Power Company in 1931. From there he moved to Niagara-on-the-Lake as local manager, and last year he was appointed to the same position in St. Marys.

As well as being an active member of service organizations and the local Chamber of Commerce, Mr. Pfaff is on the executive of the Western Metermen's Association, and a member of both the merchandising and planning committees of

HYDRO MAN DECORATED



Photo courtesy of Canadian Army, M.D. 1.

SERGEANT BRUCE McKAY STALKER of the West Lorne rural operating area, is shown in the above illustration during one of the proudest moments of his life when he was awarded the Military Medal by Viscount Alexander of Tunis, Canada's Governor-General, and one of the outstanding British generals of the War, at an Investiture held in Windsor recently. Sgt. Stalker received his decoration for gallant and distinguished service with the Royal Canadian Armoured Corps in Northwest Europe. An army report states that "Sgt. Stalker at all times showed the highest order of leadership, initiative and daring."

the Association of Municipal Electrical Utilities.

While attending High School at Hensall, the town where he was born, Mr. Pfaff was a noted hockey and soft ball player. At present his spare time, if any, is devoted to tennis and wood-working.

The new Public Utilities Office for Hydro at St. Marys has been credited to Ray Pfaff's planning. This building combines a show room, general office, board room, washrooms, boiler room, meter room, garage, repair room and store room facilities.



ABOVE IS shown the original grist mill, which is located at the north branch of the Saugeen river and which was built in 1860 by Adam Scott Elliot, who is credited with being the founder of Chesley. The mill is still in the same family and still "grinding."

CHESLEY

(Continued from page 16)

payment having been met on December 30, 1937.

According to the annals of the town, this area was known as Sconeville until 1868, when, in that year a new post office was opened and the name changed to Chesley after a Mr. Chesley who worked in the post office department.

Chesley, which is situated on the north branch of the Saugeen river in Bruce county, was incorporated as a village in 1879, and as a town in 1906.

Progressive Public Spirit

The steady growth of this municipality is largely credited to the progressive and energetic public spirit of its first settlers, which has been perpetuated by each succeeding generation. It is now an industrial town and claims to be one of the first communities in Western Ontario to become a furniture manufacturing centre, when the Krug Brothers and Company Limited, started operation in 1886. This company has been in continuous operation ever since. Other leading companies include the Chesley Chair Company; the Chesley Manufacturing Company, which also manufactures furniture; the Henkel Flour Mill; and two large creameries and cold storage plants. The recently established Canadian General Rubber Company, has an up-to-date bright, airy plant which is equipped with

modern fluorescent lighting. This company makes different types of ladies' rainwear.

Many Fine Homes

Chesley can well be proud of its many fine homes and well-kept gardens, buildings, schools, churches, parks and a well stocked public library, which all contribute to the homey and friendly atmosphere of the community.

The affairs of the Chesley Public Utilities Commission are at present administered by C. J. Halliday, chairman; mayor William P. Krug and Wellington G. Krug, commissioners; with George W. Grabb, secretary-treasurer and superintendent, who also acts as the town clerk.

E. A. ROTH PASSES

Well known in the town of Tavistock for his interest in civic and service affairs, EDWARD A. ROTH died recently at his home.

He was born in East Zorra township in 1882, and moved to Tavistock in 1908, where he began his business career.

For the past eight years, Mr. Roth had been secretary-treasurer of the Tavistock Public Utilities Commission, resigning in February because of ill health. At one time he had been clerk and treasurer of the town, and secretary of the School and Library Boards.

When the Tavistock Arena Company was formed to increase town activities,

Mr. Roth was its first president. During the recent Victory Loan periods, he acted as chairman of the committee for Tavistock and East Zorra district.

Surviving are his wife, four sons, four brothers, four sisters and five grandchildren.

THROUGH THE YEARS

(Continued from page 19)

defective, could not shut off the current, so all of the coffee in that store and several other stores in the vicinity was ground up before someone cut the wire to stop the motor. This motor is now in the museum of the Toronto Hydro-Electric System.

Mr. Wright was active in organizing the Canadian Electrical Association in 1891. He was its first President and continued in that office for several years.

The Toronto Electric Light Company absorbed in 1896 the Toronto Incandescent Light Company, which Frederic Nicholls organized in 1889. In 1911 the city-owned Toronto Hydro-Electric System started operations. In 1920 the T.E.L. and other companies sold out to The Hydro-Electric Power Commission of Ontario, and in 1923 the T.E.L. system was absorbed by the Toronto Hydro System.

In our next installment we will study the achievements of Mr. Frederic Nicholls and other electrical pioneers.



IT ISN'T every utilities' office that has an electric refrigerator, these days, but at Chesley the one shown above is used by the Board of Health for supplies of serums to combat diphtheria, scarlet fever and other diseases. Marjory Zang, office assistant, shows us a sample package.



Hydro

HOME FORUM

by Edithemmu Muir

HOME ECONOMIST

When the sun sets over the garden and there is an early blue haze—that is September. It tells us that Summer is really making her exit . . . Time to garner late fruits. It is also time to prepare for frosty nights. The following hints about fall duties are apt to go unrewarded and unregarded—but Hydro employees told me so.

Small quantities of root crops, such as beets, carrots, potatoes, turnips and salsify should be stored in a root cellar or dark basement in moist sand, either in piles or in boxes. Put in alternate layers of the roots and sand, and the vegetables will not shrivel. When the vegetables are gathered, the tops should be cut off.

Cabbages may be wrapped in newspaper and stored in a dry box. Green tomatoes should be wrapped in two thicknesses of paper and put in shallow boxes.

Proper ventilation of storage room is essential. A window should be constructed for easy adjustment during very cold weather.

Pare a summer squash and cut into inch slices about half an inch thick. Dust pieces with salt and pepper and a touch of mustard, dip in beaten egg, then in fine crumbs and fry brown. It's good fried squash.

Chicken pot pie can be made with any diced leftover vegetables and topped with a tea biscuit dough.

Onions au gratin: Green onions, stems and all, are washed, split and trimmed of bulb skin. Boil them whole in a very little water; dish up on toast, like asparagus. Pour over a thick cream sauce to which grated cheese is added.

Barbecue sauce: Heat together $\frac{1}{2}$ cup catsup, 1 tbsp. vinegar, 1 tbsp. minced onion or chives, dash of chili powder, f.g. cayenne, 2 tsps. Worcestershire sauce, salt to taste. Serve with meat patties.

Veal cutlet baked in milk was always good, but is better if vegetables are cooked with meat. Put layers of sliced raw carrot and onion, cut thin, in baking dish. Rub seasonings and flour into pieces of veal, brown in a little fat in frying pan, arrange meat on vegetables, add milk and bake in electric oven of 325 degs.

Button ear rings: Buy two extra buttons when you are buying dress buttons and, with a pair of ear-ring holders, make ear-rings to match your dress buttons. Simply glue buttons on holders and you have a fashionable accessory.

Staple gun: Watching my efforts thumbtacking mosquito netting on a cottage window, an efficient office worker suggested stapling it down with a hand staple gun. This worked quickly, smoothly and neatly. Torn wall paper may be easily kept in place by stapling it down.

Picnic boxes: Save cottage cheese cartons and their lids. Keep one for each of the family to use as a picnic box; fill half way with potato salad and put the lettuce and garnish on top. There is no serving to be done, no plates to wash, if you eat from the cartons.

Restoration: Mother changed the tone of her voice as she saw me spill acetone (nail polish remover) over her mahogany table last night. Luckily there was some camphor oil in the medicine cabinet which restored the wood finish and mother's disposition.

Window sills: Protect painted sills from the marks that flower pots some times make by cutting a circle of waxed paper about the size of the plant pot to be used as a mat.

Tack one end of your tape measure to an empty threadspool, wind around and secure it firmly with a rubber band. It will not tangle with other things in the sewing basket.

A section silverware box is a convenient utensil to hold brush and comb, hairpins and cosmetics. Everything is right at your finger tips for the morning rush.

Waxed bread wrappers make good polishing cloths for closed electric elements and the iron or steel top stove.

Rubber gloves last longer if a small tuft of absorbent cotton is put in each finger end.

My grandmother's cook book is seventy-eight years old. I wish you could see it and the clippings pasted on the back pages. An advertisement taken from her home town paper says: cut out this ad, won't appear again—25 ass't choice gladioli 25 cents. Currant bushes 2 for 5 cents.

To wash carpets: Use 1 peck of potatoes for a large carpet; scrape them into a pail and let stand overnight in a pailful of water. Use a brush and scrub carpet with liquid. If brown in color use, in addition, juice of raw beef. When dry, brush with clean broom.

To preserve autumn leaves: Place sprigs between 2 newspapers and leave with a light weight upon them until moisture has been absorbed. Then dip into wax which you have melted over water. Take off stove. Add a few drops of turpentine carefully. Draw leaves into pan to coat with wax immediately on both sides. If wax is too hot, leaf will shrivel; if too cool, it will harden too thick.

Another old clipping reads: Whether well-to-do, or in narrow circumstances you will hold that waste is sin, against yourself and the world. Stint nowhere in cleanliness, light and warmth and let what you have be the best and prettiest for the cost.

Lighter Lines



"Who turned the fire up under the spinach?"

"What's wrong with this sentence?" asked an English teacher of a class of small boys: "The horse and the cow was in the pasture."

A smart little fellow answered: "Please sir, the lady should have come first."

Bank: An institution where you can borrow money if you can present sufficient evidence that you don't need it.

Revised adage: A little woman is a dangerous thing.



"That's the trouble with you policemen—always taking the law into your own hands!"

The worst case of insomnia on record is that of a man who couldn't sleep even when it was time to get up.

Mrs. Jones consulted the doctor about her husband's talking in his sleep. The doctor said: "Don't worry, I can give him something to stop that."

"Oh, no doctor," Mrs. Jones objected, "what I want is something to make him talk distinctly."

It may be that the race is not always to the swift nor the battle to the strong—but that is the way to bet.—Damon Runyan.

A sufficient commentary on human nature is that a mob never rushes madly across town to do a needed kindness.

"That's a wonderful follow-up system you have for collections," said Smith to his friend Jones, "Where did you find it?" "Oh," replied Jones, "I just saved the letters my boy sent me while he was at College and adapted them to my business."

It's goin' t' be fun t' watch an' see how long the meek kin keep the earth after they inherit it.—Kin Hubbard.

"Is your girl friend beautiful?" asked Bobbie McTavish of Sandy McGregor.

"That she is," replied McGregor, "when I take her home in a taxi I can hardly keep my eyes on the meter."

A careful swain used to begin his love letters: "My own precious girl and gentlemen of the jury."

Rastus Jackson, a thoroughly married darkey was one day approached by a life insurance agent.

"Better let me write you a policy, Rastus," suggested the agent. "No, sah," declared Rastus emphatically, "Ah ain't any too safe at home as it is."

Sometimes you see a poor worm who doesn't know which way to turn.

No woman, says a philosopher, really makes a fool out of a man, but she sure can give him an opportunity to develop his natural capacities.



"I knew there was some ulterior motive when you bought Junior that sand box!"

Male customer: I want so see some ladies' satin slips.

Salesgirl. For your wife, sir? Or would you like something better?

A little boy's favourite uncle was to be married and he was questioning his mother about the wedding: "Mother," the lad asked, "the last three days they give them anything they want to eat, don't they?"



"I'd like to saw that wood—but I've got my good clothes on!"

#his and #hat

By The Editor

Even in this "enlightened" age when it is said that peace is "raging" throughout the world, there are comparatively few people who seem to have a definite conception of what is meant by "public relations."

There are still those who associate "public relations" with the cigar-chewing press agent of the movie world—a gentleman who can adroitly elevate his cigar from the corner of mouth at a forty-five degree angle and wink in that knowing manner to assure his client, Miss Graball Glamour, that he'll have her displayed to the best advantage on the front pages of daily newspapers and on the front covers of magazines. That, to us, seems to be going out on a limb in more than one sense.

In newspaper circles, the public relations man is sometimes described facetiously as a press agent with a crease in his pants. This description is actually not so funny as it would appear at first glance for it indicates that the work of the "press agent" has assumed a broader and more vital significance and a dignity that is in keeping with the work under present-day conditions.

We launched into a discussion on this subject in response to a number of requests received from readers who have asked us to define "good public relations." We shall endeavour to do so to the best of our ability and from our experience in this highly interesting field. In approaching the subject we thought that it would be a good idea to find out, first of all, what the term "public relations" suggested to people who are engaged in a number of different occupations.

Our first query was directed to a fellow editor who came back with this answer:

"It means goodwill, courtesy and, above all, sincerity in our relations with one another."

A junior clerk told us: "It means everybody working together happily."

A young homemaker said: "It means goodwill . . . services . . . there's something personal about it. It means being

enthusiastic and willing to look after details . . . to be interested in one another's problems."

A young advertising man summed it up in this way: "Winning friends for your products and services."

A young secretary said: "It implies meeting the public . . . advertising and things like that."

Another secretary said: "It means people getting along together."

A film director said: "It means an understanding of the functions of a company in relation to the customers. It involves creating a good impression for a company."

An engineer's interpretation was: "Happy relations with the public. In other words, good salesmanship."

An accountant has this to say: "It involves contacts with the press and outsiders . . . doing your best to answer their questions in the same way as I'm trying to answer your question."

These are but a few of the answers. In general, they reveal the most obvious conceptions of what is meant by the term "public relations." Naturally, one cannot be expected to sum up at a moment's notice what it means. Actually, all the factors involved in building good public relations are too numerous and diversified to discuss in detail in this piece. In a very broad sense, it has been described as the window dressing of industry . . . the science of appearing to be exactly what you are . . . institutional advertising or the new name for the mouthpiece of industry. Personally, we like to think of the role of a public relations man as that of endowing a company or organization with a corporate personality which will be readily identified and approved by the public.

The job of building good public relations—and it's a vital job in any organization—may come under the direction of one or two men but it is the responsibility of every employee, from president to office boy, to carry out that job. The man at the information desk, the elevator girl, the office boy, the junior clerk, the department head—in fact every individual

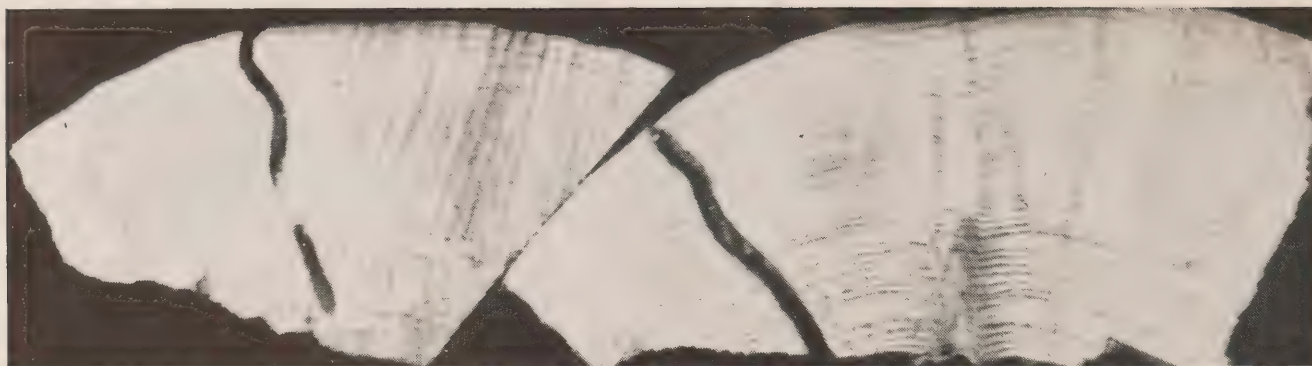
in a company can, by his appearance, his manner and intelligence create an impression which is good or bad upon the mind of the visitor to the offices of any organization.

We were asked what we regarded as the basic fundamentals which should be observed by the individual who is interested in doing a good public relations job for his organization. Our answer was: "Good appearance, good manners and common sense." We might add, that the men and women who observe these fundamentals in their daily lives—in the home as well as in the office—will be doing a good public relations job not only for their companies but for themselves ALL THE TIME.

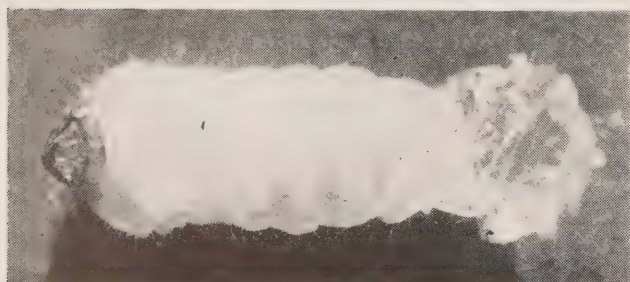
It is a strange commentary upon human nature that there are people, who can give you an intelligent interpretation of public relations but who fail to consistently observe these basic fundamentals. They are either too indolent or too perverse to make frequent use of soap and water, clean their teeth, brush their hair or polish their shoes. In many instances, it is possible to determine their favorite dishes by simply glancing at their clothes. Such people are not only among those who are least likely to do a good public relations job, but they are the people who are least likely to be entrusted with important jobs or have an opportunity for advancement.

It is possible that a genius might "get away" with being careless about his or her appearance but even the genius who is careless about these things is only "tolerated." So few come within the "genius" classification that they must give the closest attention to personal cleanliness and appearance in order to make and KEEP friends and influence people inside and outside their place of business.

These are but a few passing thoughts on basic fundamentals associated with the subject of public relations. Next month, we shall discuss other phases of this subject and then, in response to many requests from readers, we shall present our views on what good public relations involves in relation to the functions of the Commission.



HORIZONTAL CROSS sections of pole: Left shows passageway plugged with its packing of chips. The borer was found in the cavity at the inner end. Right is a passage that has been cleaned out by the fly when it emerged.



ENLARGED VIEW of pine borer showing head and nippers with which it eats its way through solid wood. It was found by the field inspector in a pole submitted for power line construction. Magnification—7.5x.

QUITE A BORE!

From time to time problems arise, which, in a literal sense, get Hydro field inspectors up a tree.

Take the case of *Rhagnum Lineatum*.

This fellow has proved to be quite a bore. In fact he has been boring his way into pine trees to the extent that Hydro inspectors are keeping a watchful eye on his movements, and, through preventative measures, are planning to curb the inroads of the pest which is known generally as the "pine borer".

His sawdusty trail was picked up a few months ago when a pile of Hydro poles was examined and they were found to be full of neatly bored holes. In fact five per cent of this lot of poles had to be rejected because of the damage which had been done by this invader.

The holes are of a curious sort, neither circular in shape nor straight in direction; they are roughly rectangular and twist and turn through the wood crossing the grain radially. The habit of this slug is to bore into a tree and after it has made a rounded chamber at the end of the rectangular passageway, it plugs the hole in behind it with a wad of fresh chips. It then uses the secluded cavity as a nest or cocoon. When it develops into a moth or fly it pushes the pile of chips out of the way and emerges.

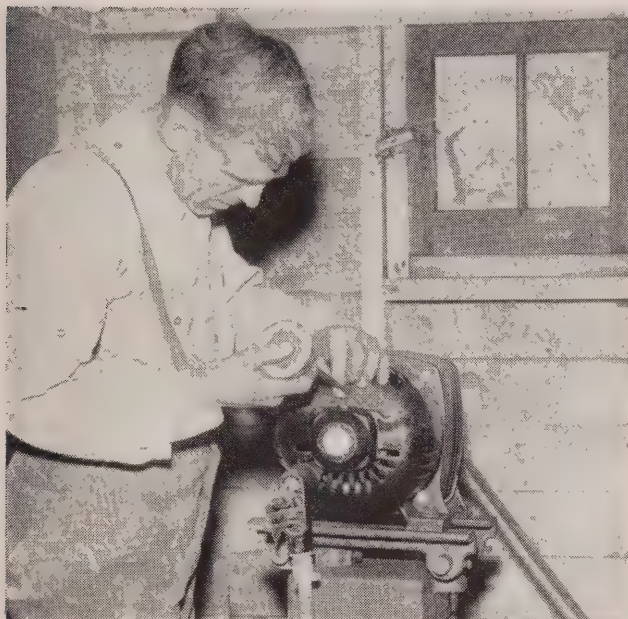
The borer likes spruce and pine possibly other trees as well. However, it is its appetite for the pines that interests Hydro since it is mostly pine poles that are used for power line construction. Poles that have holes more than one-sixteenth of an inch in diameter must be discarded. Last year the Commission bought 59,000 poles, so it is a matter of importance that these poles be in good condition, be carefully inspected and then treated with preservatives.



RADIAL CROSS section of pine borer's home quarters in the pole showing the long rectangular hallway and the chamber at the end.

HYDRO AT WORK ON THE FARM

WATER PUMPING



Next to lighting, running water is probably the greatest benefit that Hydro power brings to the farm.

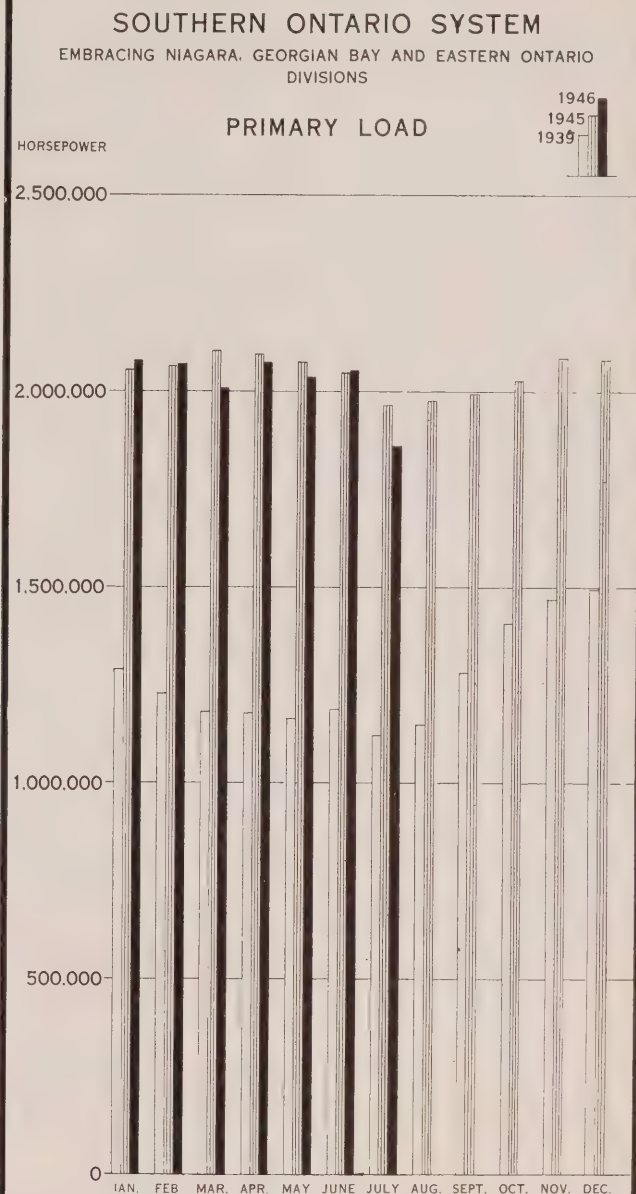
In the farm home, a modern electric water pumping system does away with the drudgery of hand pumping and the lugging of water from the well. It brings the convenience of inside bathroom facilities and provides fresh running water at the turn of a tap.

In the barn and other farm buildings, it has been proven that running water actually saves money. Tests conducted show that with running water available, cows will produce 10 to 20 per cent more milk, with 6 to 12 per cent more butter fat. Fresh water also improves the general condition of the animals on the farm, and contributes to an increase in egg production, as well as providing many other advantages.

Statistics indicate that there is also a great saving in man-hours when water is pumped electrically. For example, when an electric pump is used on the farm with four in the family, 25 milk cows and 15 young cattle, the saving in time and labour would amount to 1190 man-hours or approximately 119 working days a year. This saving, of course, would be correspondingly greater on farms where there are more cows, young cattle, horses, sheep, hogs and poultry. There are many uses for water on the farm. For instance, irrigation during dry spells often make the difference between poor and satisfactory yields.

Some farmers use electrically-pumped sprays consisting of portable piping which may be easily moved from field to field.

It is generally conceded that muscle power is expensive and that is why modern electric farm equipment is so popular. It enables the farmer to do more with less effort and in less time, which results in lower costs and greater production. This idea is borne out when it is realized that the estimated amount of water used in the kitchen of an average farm family is seven buckets a day, weighing an average of 29 pounds, or approximately 37 tons a year. Hydro, it has been estimated, can pump all the water required for the day's requirements at a cost of approximately one cent.



PRIMARY LOADS

AREA SERVED BY	MAXIMUM 20-MINUTE PEAK H.P.		PER CENT INCREASE
	JULY, 1946	JULY, 1945	
SOUTHERN ONTARIO SYSTEM ..	1,859,842	1,962,117	- 5.2
THUNDER BAY SYSTEM	132,708	120,777	+ 9.9
NORTHERN ONTARIO PROPERTIES	202,501	222,822	- 9.1
TOTAL ..	2,195,051	2,305,716	- 4.8

PRIMARY AND SECONDARY LOADS

SOUTHERN ONTARIO SYSTEM ..	2,071,249	2,113,424	- 2.0
THUNDER BAY SYSTEM	147,989	129,893	+ 13.9
NORTHERN ONTARIO PROPERTIES	262,119	260,456	+ 0.6
TOTAL	2,481,357	2,503,773	- 0.9

MUNICIPAL LOADS, JUNE, 1946

SOUTHERN ONTARIO SYSTEM			Domes- tic Con- sumers		Domes- tic Con- sumers			
NIAGARA DIVISION (25-Cycle)			H.P.		H.P.			
	H.P.	Domes- tic Con- sumers						
Acton -----	2,002	544	Erieau -----	218	197	Palmerston -----	707	400
Agincourt -----	268	168	Erie Beach -----	37	79	Paris -----	2,152	1,215
Ailsa Craig -----	182	147	Essex -----	728	528	Parkhill -----	294	315
Alvinston -----	146	205	Etobicoke -----	11,684	6,157	Petrolia -----	1,067	825
Amherstburg -----	1,282	734	Exeter -----	902	544	Plattsville -----	182	118
Ancaster Twp. -----	490	394	Fergus -----	1,735	770	Point Edward -----	1,718	349
Arkona -----	74	117	Fonthill -----	212	300	Port Colborne -----	1,853	1,655
Aurora -----	1,908	793	Forest -----	723	510	Port Credit -----	1,089	64
Aylmer -----	1,029	758	Forest Hill -----	7,070	3,537	Port Dalhousie -----	1,260	69
Ayr -----	333	227	Galt -----	13,506	4,296	Port Dover -----	667	750
Baden -----	629	168	Georgetown -----	2,423	833	Port Rowan -----	123	171
Beachville -----	831	167	Glencoe -----	263	230	Port Stanley -----	1,207	825
Beamsville -----	637	399	Goderich -----	1,989	1,361	Preston -----	4,549	1,689
Belle River -----	263	314	Granton -----	83	85	Princeton -----	203	98
Blenheim -----	701	560	Grimsby -----	1,115	655	Queenston -----	178	81
Blyth -----	171	184	Guelph -----	14,336	5,703	Richmond Hill -----	666	414
Bolton -----	309	172	Hagersville -----	1,352	406	Ridgetown -----	622	599
Bothwell -----	170	185	Hamilton -----	162,377	43,700	Riverside -----	1,359	1,559
Brampton -----	3,937	1,627	Harriston -----	638	378	Rockwood -----	184	174
Brantford -----	25,035	8,337	Harrow -----	613	350	Rodney -----	166	239
Brantford Twp. -----	1,858	1,476	Hensall -----	270	210	St. Catharines -----	30,340	8,742
Bridgeport -----	264	178	Hespeler -----	3,134	825	St. Clair Beach -----	140	102
Brigden -----	139	125	Highgate -----	103	107	St. George -----	254	154
Brussels -----	207	256	Humberstone -----	626	738	St. Jacobs -----	407	141
Burford -----	365	235	Ingersoll -----	3,974	1,568	St. Marys -----	2,191	1,076
Burgessville -----	85	64	Jarvis -----	177	163	St. Thomas -----	9,249	4,718
Burlington -----	1,928	1,234	Kingsville -----	713	641	Sarnia -----	7,181	5,403
Burlington Beach -----	597	732	Kitchener -----	34,228	8,718	Scarborough Twp. -----	5,992	5,950
Caledonia -----	471	452	Lambeth -----	152	140	Seaforth -----	1,218	524
Campbellville -----	53	50	LaSalle -----	373	259	Smithville -----	347	185
Cayuga -----	226	186	Leamington -----	1,997	1,688	Simcoe -----	3,119	1,678
Chatham -----	8,119	4,575	Listowel -----	1,762	801	Springfield -----	83	133
Chippawa -----	399	364	London -----	46,793	19,859	Stamford Twp -----	3,774	2,497
Clifford -----	126	130	London Twp. -----	540	494	Stoney Creek -----	299	289
Clinton -----	823	593	Long Branch -----	1,801	1,564	Stouffville -----	531	408
Comber -----	181	120	Lucan -----	244	186	Stratford -----	9,153	4,561
Cottam -----	101	131	Lynden -----	125	105	Strathroy -----	1,791	876
Courtright -----	59	91	Markham -----	485	350	Streetsville -----	264	208
Dashwood -----	140	102	Merlin -----	104	124	Sutton -----	553	468
Delaware -----	98	71	Merritton -----	9,964	962	Swansea -----	3,144	2,096
Delhi -----	568	609	Milton -----	1,830	555	Tavistock -----	769	300
Dorchester -----	109	157	Milverton -----	528	263	Tecumseh -----	552	711
Drayton -----	174	167	Mimico -----	3,397	2,306	Thamesford -----	316	147
Dresden -----	577	466	Mitchell -----	933	521	Thamesville -----	297	243
Drumbo -----	143	90	Moorefield -----	113	56	Thedford -----	154	166
Dublin -----	50	61	Mount Brydges -----	137	166	Thorndale -----	137	83
Dundas -----	3,271	1,458	Newbury -----	50	70	Thorold -----	3,338	1,274
Dunnville -----	1,664	1,063	New Hamburg -----	841	384	Tilbury -----	918	502
Dutton -----	290	234	Newmarket -----	2,522	1,022	Tillsonburg -----	2,046	1,243
East York Twp. -----	10,494	11,918	New Toronto -----	5,757	2,029	Toronto -----	403,626	154,302
Elmira -----	1,803	554	Niagara Falls -----	13,576	4,984	Toronto Twp. -----	4,828	3,065
Elora -----	596	355	Niagara-on-the-Lake -----	1,139	623	Wallaceburg -----	5,748	1,387
Embro -----	196	125	North York Twp. -----	11,661	7,019	Wardsville -----	67	65
			Norwich -----	613	391	Waterdown -----	352	280
			Oil Springs -----	189	104	Waterford -----	494	397
			Otterville -----	141	143	Waterloo -----	7,461	2,306
						Watford -----	473	312

MUNICIPAL LOADS, JUNE, 1946

	H.P.	Domes- tic Con- sumers		H.P.	Domes- tic Con- sumers		H.P.	Domes- tic Con- sumers
Welland	11,812	3,264	Neustadt	46	110	Iroquois	367	279
Wellesley	176	137	Orangeville	960	746	Kemptville	470	393
West Lorne	408	227	Owen Sound	8,105	3,663	Kingston	19,037	7,867
Weston	5,584	1,700	Paisley	202	202	Lakefield	552	360
Wheatley	246	237	Penetanguishene	1,384	773	Lanark	128	173
Windsor	54,006	26,909	Port Carling	355	211	Lancaster	52	116
Woodbridge	981	314	Port Elgin	687	509	Lindsay	3,932	2,289
Woodstock	9,301	3,448	Port McNicoll	129	241	Madoc	286	318
Wyoming	126	166	Port Perry	447	381	Marmora	183	249
York Twp.	21,908	21,946	Priceville	13	38	Martintown	63	56
Zurich	173	149	Ripley	151	129	Maxville	122	176
(66 2/3-Cycle)			Rosseau	57	58	Millbrook	156	182
Bronte	181	244	Shelburne	350	314	Morrisburg	449	444
Oakville	1,677	1,285	Southampton	696	567	Napanee	1,817	897
Trafalgar Twp.	797	573	Stayner	402	341	Newcastle	300	230
GEORGIAN BAY DIVISION			Sunderland	116	140	Norwood	276	242
(60-Cycle)			Tara	171	164	Omeme	288	173
Alliston	545	447	Teeswater	197	233	Orono	105	183
Arthur	213	199	Thornton	41	67	Oshawa	21,093	6,765
Bala	369	336	Tottenham	158	161	Ottawa	41,377	15,658
Barrie	5,391	2,471	Uxbridge	516	423	Perth	2,115	1,110
Beaverton	363	331	Victoria Harbour	110	271	Peterborough	19,616	6,702
Beeton	119	148	Walkerton	1,410	687	Picton	1,707	1,336
Bradford	382	291	Waubushene	216	235	Port Hope	3,317	1,455
Brechin	70	53	Warton	454	437	Prescott	1,656	815
Cannington	317	262	Windermere	105	64	Richmond	99	85
Chatsworth	119	108	Wingham	965	560	Russell	105	119
Chesley	784	456	Woodville	97	116	Smiths Falls	3,876	2,012
Coldwater	221	159	EASTERN ONTARIO DIVISION			Stirling	429	293
Collingwood	2,897	1,650	(60-Cycle)			Trenton	5,788	1,833
Cookstown	119	119	Alexandria	381	415	Tweed	435	321
Creemore	202	176	Apple Hill	66	66	Warkworth	96	135
Dundalk	301	210	Arnprior	1,625	891	Wellington	348	343
Durham	568	464	Athens	165	183	Westport	140	149
Elmvale	173	191	Bath	58	64	Whitby	1,907	1,054
Elmwood	107	72	Belleville	9,026	3,939	Williamsburg	127	86
Flesherton	91	126	Bloomfield	202	181	Winchester	591	309
Grand Valley	219	184	Bowmanville	3,421	1,234	THUNDER BAY SYSTEM		
Gravenhurst	1,559	593	Brighton	623	563	(60-Cycle)		
Hanover	1,743	850	Brockville	9,737	3,101	Fort William	15,938	7,332
Holstein	22	63	Cardinal	514	394	Nipigon Twp.	326	243
Huntsville	1,463	744	Carleton Place	2,422	1,076	Port Arthur	57,562	6,099
Kincardine	911	741	Chesterville	371	248	NORTHERN ONTARIO		
Kirkfield	27	37	Cobden	155	160	PROPERTIES		
Lucknow	537	287	Cobourg	2,778	1,443	Nipissing District		
MacTier	149	128	Colborne	276	285	(60-Cycle)		
Markdale	222	231	Deseronto	341	395	North Bay	6,080	3,379
Meaford	1,007	757	Finch	144	107	Patricia District		
Midland	4,159	1,625	Frankford	234	262	(60-Cycle)		
Mildmay	181	184	Hastings	163	238	Sioux Lookout	331	512
Mount Forest	719	502	Havelock	170	295	Sudbury District		
						(60-Cycle)		
						Capreol	497	344
						Sudbury	10,920	8,734

HYDRO TEAMS

WITH

Mining



THROUGH LOW-COST POWER

Hydro supplies large blocks of power from its plants in the north for mining in Northern Ontario, and power from Niagara for refining in Southern Ontario.

In mining, as with most other industry throughout Ontario, your Hydro is the source of that energy that contributes to greater prosperity and better living for our people.

Industries are attracted to Ontario by dependable, low-cost Hydro service. If you are planning new activities or expansion requiring more power, talk it over with your Hydro as early as possible. By knowing your plans, Hydro can better arrange to serve you with that reliability and economy which is the foundation of its reputation.

THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO

HYDRO! News



"... GIFTS OF EARTH ..."

... Right Now, Gentlemen,



We should see about Hydro Power

If you expect to need more Hydro power for a new factory or new additions, you will be wise to discuss your plans with Hydro while they are in the "blueprint" stage. If you neglect this, a costly delay in starting operations may be inevitable.

Even where power lines pass by your site, they may be well loaded already . . . or others may be planning to use more power in the same district. Hydro has to plan, and probably provide additional distribution equipment, in order to supply added blocks of power. This all takes time, especially in these days of uncertain supply conditions.

It is Hydro's genuine desire to co-operate with industry and to serve its power requirements promptly and efficiently. If you will contact your local Hydro well in advance of your anticipated needs, it will be to your advantage and will avoid delay and inconvenience.



THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO



THE HYDRO - ELECTRIC POWER COMMISSION OF ONTARIO

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THE FRONT COVER



JUST a few weeks ago,
Alan Walker, Toronto
photographer, was driving
through Ontario's country-
side when he saw something
that prompted him to stop
his car and reach for his
camera. The reason was
obvious when he submitted
one of the pictures he had
taken. As he dropped it on
the desk he remarked: "The
Gifts Of Earth," and so
Hydro News had a front
cover with a title which
seemed very appropriate at
this season.

Volume 33

October, 1946

Number 10

CONTENTS

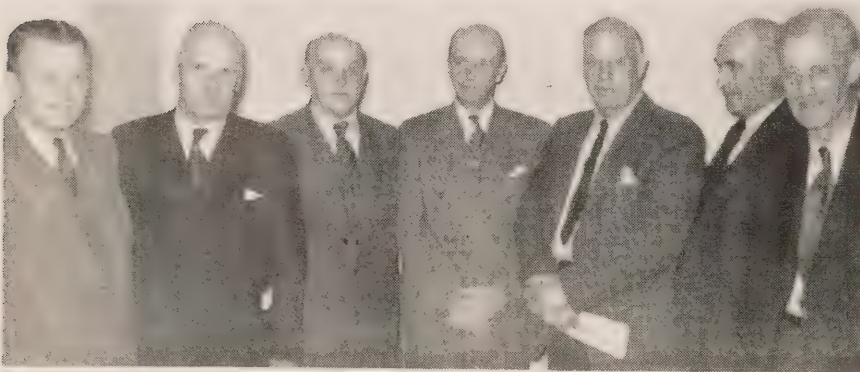
District No. 3 Convention Pictures	-	-	-	2
Page Three	-	-	-	3
Frontier Men	-	-	-	4
District No. 2 Meeting	-	-	-	6
Dr. Thomas H. Hogg's Addresses	-	-	-	8
Red Seal Programme	-	-	-	9
Southampton	-	-	-	10
District No. 3 Meeting	-	-	-	12
Hydro Panel Session	-	-	-	13
When Day Is Done	-	-	-	14
Eastern Ontario Meeting	-	-	-	18
Egyptian Representatives Visit Hydro	-	-	-	19
Down Through The Years	-	-	-	20
Around The Hydro Circuit	-	-	-	22
Tribute To "Bud" Manby	-	-	-	24
Hydro Home Forum	-	-	-	27
This And That	-	-	-	28
Honour C. J. Vick	-	-	-	29
Lighter Lines	-	-	-	30
Hydro At Work On The Farm	-	-	-	31
Monthly Load Summary	-	-	-	31
Municipal Loads	-	-	-	32





DISTINGUISHED GUESTS at O.M.E.A. District No. 3 Convention at Kenora included, left to right, John Dibblee (inset), R. T. Jeffery, R. L. Hearn, chief engineers of the H.E.P.C.; Hon. W. G. Thompson, minister of lands and forests and game and fisheries; Hon. G. H. Challies, vice-chairman, H.E.P.C.; and W. Ross Strike, K.C., H.E.P.C. commissioner and past president of the O.M.E.A.

IN THIS group, reading left to right are: William Hambleton, Dryden; Arnold Brace, Toronto; A. G. Jennings, East York Township Hydro-Electric Commission; and F. Greenslade, Kenora Public Utilities Commission.



WHILE WAITING for the dinner bell to ring, these delegates lined up for the photographer. They are, left to right: A. W. H. Taber, C. H. Moors and J. R. Pattison of Fort William; Lt-Col. H. Cook and R. B. Chandler of Port Arthur; D. T. Flannery and T. C. James, H.E.P.C.

SOME OF the Dryden delegates who were "snapped" during the evening session on the first day of District No. 3 Convention, when approximately 200 guests gathered together for dinner.



* Page Three *

A HABIT WORTH KEEPING

THIS month Canadians will have an opportunity of investing in Canada Savings Bonds and of continuing in the same convenient way the savings habit which was formed during the war years when patriotic citizens invested in Victory Bonds and War Savings Certificates.

For most of us, saving money presents a problem in self-discipline. There are so many things we want and so many ways of spending money. But during the war, through the purchase of Victory Bonds and War Savings Certificates, which in many cases were deducted from pay cheques, thousands of people almost forgot they were on the regular savings plan until they collected their bonds and experienced that feeling of added security and keen satisfaction.

These new bonds, which will embrace many of the features of the Victory Bonds and War Savings Certificates, will come in units of \$50, \$100, \$500 and \$1,000. Each bond will be registered in the name of the owner and will pay $2\frac{3}{4}$ per cent interest for ten years by annual coupon. The bonds will be cashable at any time, in any bank, at full face value, plus interest.

Canadians owe it to themselves to invest in these gilt-edged securities and to continue saving this easy and convenient way. The slogan is indeed well chosen—eight out of ten will buy again.

FRONTIER COLLEGE

FOR more than forty-five years Frontier College has been doing important work in the lumber, mining and construction camps of the Dominion. Thousands of migratory workers—Canadian as well as foreign born—have been contacted by this unique teaching institution, with benefit to themselves, their employers and their country. Frontier College not only provides classes of instruction, text-books and literature for men who have had scant opportunity for even a rudimentary education—it has the happy knack of developing better workmen and better Canadians.

Frontier College is not engaged in work of a religious character, but it has all the zeal and fervour of a missionary crusade. Its present principal, Dr. E. W. Bradwin, has been associated with the organization from its infancy, and he has under

his direction a staff of enthusiastic teachers and instructors, including graduates and under-graduates from many Canadian universities.

In spite of all the problems involved, Frontier College has been an outstanding success. It has penetrated a field inaccessible to the school systems and achieved highly satisfactory results. Its activities today extend from coast to coast, but a major portion of its work is still carried out in the back areas of Ontario. Long ago it was welcomed to Hydro camps by the late Sir Adam Beck, who was quick to realize the services it could render, and letters from many workers who have been employed in the Commission's developments are included in the testimonials received by Frontier College from former pupils—once of different nationalities but now all good Canadians.

SHARING WITH OTHERS

WITH bountiful harvests this year in most parts of the Dominion, Canadians have good reason for rejoicing at this Thanksgiving season.

In Ontario, despite some late summer vagaries on the part of the weather, early predictions of abundant crops have, in general, been fulfilled. Grains have been above the average this year in both quality and yield. As against last year, when there was practically no fruit, the peach crop has been one of the finest ever garnered in the province. Apples are now in plentiful supply, and the vineyards are loaded with the purple grape. Pasturages, too, grown lush under vernal rains, have preserved something of their spring-time freshness almost to the present.

Yes. We have a good deal to be thankful for. But we must not regard the products of our smiling land as treasure for ourselves alone. As in the war years, we must be prepared to share our good fortune with others.

The government, as in the past, through its various agencies, will take care of this sharing business for us. It will expect us to continue to be a little patient if we cannot get all the things we want in the quantities we want them. After all, we are not really called upon to give up anything. All we are asked to do is to curb our indulgences, and that only with respect to certain foods. If we do this in the right spirit—if we are truly willing to share the bounties that Providence has showered upon our land with others less fortunate—then our Thanksgiving day will be a joyous one, indeed, because we shall be givers as well as receivers.



EACH LETTER written by these calloused hands is done in a painstaking fashion at first and then greater facility is acquired as simple copy exercises are repeated again and again under the direction of Frontier labourer-teachers who start their students with simple verbs, nouns and sentence agreement.



DURING THE day, T. S. Dushko, above, a labourer-teacher, hauls buckets of cement and water as part of his job in building a new Hydro project. After a shower and a good meal, he collects his men in the lounge and the classes begin. They generally run for a couple of hours. Mr. Dushko is shown here with three of his students who are eager to learn, and spend a lot of their leisure time in preparing assignments for the next class. The College keeps Mr. Dushko supplied with current event "helps" which are used as the basis for discussion.

By W. Ronald Mathieson, Hydro News

Clutching his English primer in huge, strong hands which almost hid the book, he commenced reading in a halting syllabic manner . . . "Tea is imported from China." . . . Conrad J. ———, a new Canadian, had taken another step in acquiring greater facility in reading the English language.

This incident, which took place in a Hydro construction camp, is a daily occurrence, wherever working men congregate, not only in the lonely hinterlands of Ontario, but in established camps

in the more settled parts of the province.

At the Commission camps, Hydro has enjoyed the close co-operation of Frontier College men whose work along leadership and educational lines has been a noteworthy feature of Hydro construction camp life for over 30 years.

Forty-Six Years' Service

Although the College was formed in 1900 by the late Alfred Fitzgerald, the guiding hand and driving force behind its activities is Dr. E. W. Bradwin, the principal, who has been associated with the organization since 1903. Tall, kindly and possessed of a dynamic personality,

he inspires ready confidence in everyone whom he meets.

After talking to Dr. Bradwin, one seems to capture something of the vision and inspiration of this crusader among men. You are conscious of having met a man who is sincerely and wholeheartedly devoted to the cause of making good Canadians out of those individuals whose environment and circumstances have not provided opportunities enjoyed by those more fortunate.

At one time the Doctor was teaching a class of 48 pupils in Bruce County for which he received \$255 a year. Upon

completion of a course at the University of Toronto, he went to Queen's where he received his Master of Arts degree. Columbia University later honoured him with a Ph.D.

Dr. Bradwin conducts the College with a view to reaching those who, by reason of foreign birth or lack of educational facilities, were unable to travel the paths of learning. These men are often reticent, shy and not easily approachable, particularly if the teacher is an outsider or a casual visitor from another sphere.

Teachers Must Work

Each year the call goes out to Canadian Universities for student teachers. Qualifications are rigid. The teacher must be prepared to work in any capacity that circumstances may dictate. In other words, he must be prepared to do manual labour—to do the same kind of work and earn his living in the same way as the men who come to him for instruction and guidance in the evening.

The Commission pays the teacher wages in accordance with his daily em-

ployment. Classrooms are provided for use by the men where nightly sessions are held.

Records of the College reveal that over 45,000 campmen, including foreign-born workers, have enrolled in study classes in branches of Frontier College. Help is given by the labourer-teacher in both elementary work and advanced subjects. Thousands of others have been listeners-in at the general classes where such subjects as current events, citizenship, hygiene, land settlement and naturalization problems have been discussed.

Constructive Influence

Upon occasion, where owing to the nature of seasonal work it has not always been possible to hold study classes, informal talks have been substituted. Dr. Bradwin firmly believes that wholesome leadership through constructive influence is best obtained through the companionship that comes from the intimacy of a common task.

The College receives no money grants from government or other official sources, but relies entirely upon public subscription and support. Yearly donations are roughly equivalent to that of a small

church. From this fund, bursaries and executive salaries are paid, which, by the way, are extremely modest.

Another method by which the College serves the men during their leisure moments, is by supplying the camps with reading material of all varieties. Thousands of magazines are collected at the Queen Street office in Toronto. Here they are carefully classified by Claude G. D. Longmore, who has spent many years in various out-of-the-way camps and realizes that some national woman's magazine might not be suitable if included in the parcels that are to be shipped all over Canada. While no definite library service has been started, Frontier has many educational books which are kept in circulation.

Encouraged Labourer-Teachers

Perhaps one of the first friends Frontier College had at Hydro was the late Sir Adam Beck who, with characteristic foresight realized the necessity of such a service, and encouraged labourer-teachers to come with the Commission. Construction men are all in favour of the College and Dave Forgan, the Commis-

(Continued on page 26)



HERE IS a typical Frontier College class which was in session when the Hydro News' photographer visited the Hydro construction camp at DeCew. Most camps have a classroom set aside for the use of the Frontier teacher. In many cases, however, a portable blackboard is set up in the mess hall soon after the dishes for the evening meal have been cleared away. While the general atmosphere is quite informal, there is a marked air of sincerity among the men as they go about the business of furthering their education.

PRESENT SITUATION CRITICAL BUT NOT ALTOGETHER HOPELESS

Meeting Power Needs, Shortages Of Materials Biggest Problems, District No. 2 O.M.E.A. Delegates Told

Although facing some of the most critical problems in its history, due largely to labour unrest in key industries with consequent shortages of construction materials—problems that are likely to bring about a serious power shortage—the situation is not altogether hopeless. Many difficulties must be expected after six years of war. The important thing is the spirit in which these problems are faced.

These were some of the thoughts expressed by speakers at the annual meeting of the Georgian Bay O.M.E.A. (District No. 2) at Southampton on September 11 when some 200 delegates were present.

A Day At A Time

Dr. Thomas H. Hogg, chairman of The Hydro-Electric Power Commission of Ontario, whose address is reported elsewhere in this issue, struck an optimistic note when he said: "We are troubled just now because we cannot fulfil immediately our earlier post-war plans. Most of these plans are concerned with physical things needing both labour and materials. The present situation, I believe, will right itself if we learn to take life a day at a time, each doing his best with the task immediately at hand."

R. T. Jeffery, chief municipal engineer, said that one of the biggest problems facing Hydro was that of meeting requirements for power—not only in getting enough at the generating plants but in getting sufficient transmission line and station capacity to transmit the power where it is required. He pointed out that there had been an abnormal load increase in the Georgian Bay division. As a result, he explained, there had been "a loading up of your stations and lines," causing low voltage.

Changed Voltage

In order to offset bad regulation, the Commission, Mr. Jeffery said, had been working since 1937 to change the voltage of the Georgian Bay division from 22,000 to 44,000 volts. The lines south of Barrie, he pointed out, were scheduled to be changed in 1947 or 1948.

Commissioner W. Ross Strike, K.C., past president of the O.M.E.A., who along with Dr. Hogg spoke at the banquet at the Breakers Hotel in the evening, directed attention to the tremendous increase in construction costs. He also pointed out that the capital costs which would have to be carried in proportion to the amount of energy generated, would

certainly increase the cost of power. While low rates were admirable, he said that it was possible to worship too long and ardently at that shrine. At this point, Mr. Strike emphasized the importance of providing the best possible service. Elimination of interruptions was just as important as low rates, he declared. "People want electricity every hour of the day. It is the job of both the provincial and local commissions to see to it that our services, as materials and labour become available, are the best so that interruptions will be at a minimum. The objective should be that interruptions will not occur."

"Continuing Programme"

From M. J. McHenry, the Commission's director of promotion, the delegates learned some interesting facts concerning the projected programme of the Electric Service League whose operations are being extended throughout Ontario. Mr. McHenry explained that it was "a continuing programme" to educate the people on the need and importance for adequately wiring homes, farms, stores and other buildings in order that the greatest possible benefit might be derived from Hydro service. He urged that all municipalities co-operate with the League on which the Commission was represented.

Hot Water Heaters

At another point, the speaker had some interesting observations to make on the new Hydro hot water heaters which had been developed by Hydro engineers and approved by the Commission and which were being manufactured to Hydro specifications. Mr. McHenry explained that they were complete units and could be installed very quickly, while elements could be replaced very easily if the necessity arose. He said that the indications were that these heaters could be supplied at low cost. He warned his audience, however, that the speed at which they could be supplied would be determined by the availability of the necessary materials.

During the afternoon business session in the town hall, a number of points were up for discussion and a few resolutions were endorsed. One of these resolutions was to the effect that the Georgian Bay Association request the H.E.P.C. to give immediate consideration to the disposition of the rate stabilization fund so that member municipalities might have "such savings" available for local extensions and improvements. The Commission was asked to communicate its decision to the district secretary-treasurer in order that he, in turn, might advise all members. The resolution also

HERE THEY ARE

In view of the interest aroused by the illustration on pages 14 and 15 in the September issue of Hydro News, portraying members of the Ontario Hydro Rifle Club of 1915, a special effort was made to obtain a complete list of names which were not previously available. These names are as follows: **FRONT ROW:** G. A. Honsberger, J. Garlick, G. Kribs, J. R. Hughes, Bob Hamilton, Frank McEvoy, W. G. Pierdon, W. McTavish, E. J. Taylor, W. H. Fawcett, W. G. Urch, A. W. Brooks, W. L. Amos, C. G. McEvoy, E. R. Durie, J. E. Pile, W. Boswell, W. Tindale, A. H. Hull, N. Malloch, A. Mercieca, Jack Main, Mr. Hacking, C. Hare, and George Staines. **MIDDLE ROW:** G. L. Kitchen, E. G. Archer, E. Parker, J. Logan, A. McPherson, A. G. Lang, R. T. Jeffery, J. Monteith, J. W. Purcell, A. S. L. Barnes, E. Palmer, F. W. Clark, A. H. McBride, W. Hamilton, D. M. Johnston, E. T. J. Brandon, A. E. Davidson, Sgt. Wright and W. W. Pope. **BACK ROW:** S. R. A. Clement, I. Campbell, D. G. Ferguson, M. J. Culligan, R. M. Thompson, George Michell, E. Porte, H. D. Rothwell, R. McKenzie, W. P. Dobson, M. C. Hare, R. L. Hearn, C. Quail, O. Holden, G. F. Ronald, J. Wilson, E. Rolland, E. E. Moore, A. F. Galea and N. Millman.

pointed out that the demand for power had been equal to and greater than the demand during the war period, and greatly in excess of that when the rate stabilization was set up. "We suggest," the resolution concluded, "that good and sufficient reason should be submitted by the H.E.P.C. if they do not decide to distribute these funds now."

Another resolution, which was endorsed, read: "This association views with concern evidence of political favouritism in appointments and services, and strongly urges that the government and the powers that be do everything possible to keep Hydro free from politics and political interference."

New Officers Selected

District No. 2 O.M.E.A. officers elected for the ensuing year are as follows: President, G. F. Hutcheson, Huntsville; first vice-president, Walter Dixon, Arthur; second vice-president, W. E. Theaker, Paisley; secretary-treasurer, Herman Denef, Hanover. Directors: C. J. Halliday, Chesley; J. F. Craig, Barrie; Stanley Sarjeant, Orillia; A. J. Walker, Wingham; Col. A. A. Kennedy, Owen Sound; N. J. McCubbin, North Bay, and J. R. Beaulieu, Penetang.



LEFT—It looks as if G. F. Hutcheson, of Huntsville, were celebrating his election to the presidency of the Georgian Bay (District No. 2) Municipal Electric Association by passing the celery and olives. Dr. Thomas H. Hogg, chairman, H.E.P.C., (left) seems to be wavering, but R. M. Durnford, president of the O.M.E.A., and W. Ross Strike, K.C., commissioner, H.E.P.C., are apparently urging Brother Hutcheson not to take "no" for an answer.

RIGHT—Following the business session of the Georgian Bay Municipal Electric Association and election of new officers, the group (right) faced the Hydro News' cameraman. They are front row, left to right: Walter Dixon, Arthur, first vice-president; J. F. Craig, Barrie, director; G. F. Hutcheson, Huntsville, president; J. R. Beaulieu, Penetang, director, and W. E. Theaker, Paisley, second vice-president; second row, left to right: N. J. McCubbin, North Bay, director; C. J. Halliday, Chesley, director; A. J. Walker, Wingham, director; Herman Denej, Hanover, secretary-treasurer; back row: R. M. Durnford, Sarnia, president, O.M.E.A.; and Mrs. Kay Kestell, Guelph, secretary-treasurer, O.M.E.A.



LEFT—Just a fraction of a second before this candid shot was taken at the Georgian Bay meeting at Southampton, R. T. Jeffery, chief municipal engineer, H.E.P.C., (left) spotted the cameraman. Mr. Jeffery and E. G. Gurnett, H.E.P.C., (centre) were engaged in a post-session conference with R. Butters, superintendent and secretary, Owen Sound Public Utilities Commission, and mayor J. Ernest Knox of Owen Sound, the other two members of this quartette.

RIGHT—It may have been the good fellowship, which marked the Georgian Bay meeting, or the anticipation of a "goodly helping" of Lake Huron trout—probably a combination of both—at any rate the four gentlemen here were in the best of spirits when this shot was taken. They are, left to right, W. M. MacDonald, superintendent, Kincardine Public Utilities Commission; A. B. Hayman, H.E.P.C.; C. E. Schwartz, secretary-treasurer and commissioner, Port Elgin Hydro-Electric Commission; and mayor J. Ernest Knox of Owen Sound.



PRESENT-DAY PROBLEMS DISCUSSED BY DR. HOGG

Hydro Chairman Addresses Georgian Bay And Eastern Ontario O.M.E.A. Annual Meetings

Adequate provision of power and extension of electrical services are essential to the continued progress and prosperity of Ontario. When victory in the late war was assured. The Hydro-Electric Power Commission of Ontario, whose plants had been working at highest capacity to speed the production of arms and munitions, began to plan important post-war programmes in the interest of all classes of consumers in the province. These plans are now being carried out—but the schedules in most new activities have been slowed down and construction is being held up by lack of material and equipment. Since there is an increasing and broadening demand for electricity, time is an important factor in the completion of the Commission's undertakings. Unless the present situation quickly adjusts itself and conditions governing the production and delivery of the necessary construction material and installation equipment are improved, there is a possibility of a serious shortage of power, with all the disadvantages which this will entail.

This was the picture presented by Dr. Thomas H. Hogg, chairman of the H.E.P.C., at the recent annual meetings of the Georgian Bay and the Eastern Ontario Municipal Electric Associations. It was a chiaroscuro picture, and the brightest lights on the canvas were a summary of the work the Commission had already accomplished, despite many difficulties, in the development of post-war programmes, and the speaker's own quiet confidence in a resurgence of that spirit of co-operation among all classes of the community which was so necessary to ensure their complete success.

Power Facilities Enlarged

At Southampton, where the Georgian Bay Municipal Electric Association met in annual session on September 11, Dr. Hogg drew attention to the many improvements to power supply and electrical service which had been carried out since the war. First among these was the building of the 110,000-volt transmission line from Oshawa to Barrie. This had been completed in June of this year. It was a 60-cycle tie between the Georgian Bay and the Eastern Ontario division, and already it was supplying a much-needed service to the Georgian Bay area. The extension of this line to the Eugenia generating plant and possibly to Owen Sound was

under consideration, while, as an additional improvement to services, all transmission lines south of Barrie and also in the Wasdells sub-division were being changed from 22,000 to 44,000 volts.

The Commission, Dr. Hogg noted, had purchased the transmission line constructed from Ragged Rapids to Nobel for supplying Defense Industries during the war. This line would be used to supply power to both Nobel and Parry Sound.

"We shall be glad," remarked Hydro's chairman, with a smile which suggested that years of waiting might at long last be rewarded, "to welcome Parry Sound as a partner municipality."

Improvements in distribution facilities in the Georgian Bay area were, the speaker stated, being continually made. Work was under way at Grand Valley in connection with an improved power service to the town of Arthur. Changes were also being made to improve power distribution at Owen Sound. In the southern section the plant and equipment of the Caledon Electric Company, recently purchased by the Commission, was being consolidated with the Hydro service in that district.

Eastern Ontario Developments

At the meeting of the Eastern Ontario Municipal Electric Association in Kingston on September 19, Dr. Hogg referred to the 81,000 horsepower development now well under way at Stewartville on the Madawaska river, and explained how power derived from this source would be tied in with existing electric services. Surveys were being made for a 60-cycle, 110,000-volt steel tower-line from Stewartville to Barrett Chute, and for a 220,000-volt steel-tower line—operating initially at 110,000 volts—from Barrett Chute to Peterborough. This would provide for a further strengthening of service to that city, and would continue on a direct line to a point about five miles north of Oshawa transformer station, and thence to the Oshawa station, itself, on a wood-pole line. At Oshawa connection would be made with the 110,000-volt tie line from Oshawa to Barrie via Scarborough, where a frequency-changer station was to be constructed to provide for interchange of power between divisions of the Southern system.

In the eastern range of the Eastern Ontario division a second 60-cycle transmission line from Ottawa to Cornwall had been completed, Dr. Hogg announced. This line was now in service, and switching stations were in process of construction at Merivale and Cornwall. In the near future the Commission plan-

ned to construct a transformer station at Russell, midway between Ottawa and Cornwall, for the purpose of improving service in that area.

Authorization, Dr. Hogg added, had been given for the construction of a 44,000-volt transmission line from Heely Falls north to Mountain Lake. As conditions warranted, this line would be extended towards Haliburton to give electrical service to a number of industries and to the popular summer resort areas.

Material Shortage Delays Work

Hydro post-war programmes, Dr. Hogg reminded his audiences, called for the harnessing of more than 500,000 additional horsepower during the next few years. With schedules on major power developments held up by present conditions, the Commission had in mind the construction of several medium-sized plants on the Madawaska river and elsewhere, and thus, possibly, to obviate to some extent the danger of an acute power shortage. The chairman's further remarks, however, indicated that this work, if carried out, was only to be regarded as a relief measure and could not be expected fully to meet the increased demands for power.

Continuing, the Commission's chairman spoke of the effects protracted industrial disputes, with consequent slowing-down of industrial production, were having on Hydro programmes that were designed to benefit all classes of the community.

"In our complex, interdependent, modern world," said Dr. Hogg, "the effects of a cessation of production may extend far beyond the confines of the industry and the employees immediately concerned . . . The far-reaching chain of events which speedily follow may be illustrated in the Commission's experience."

"The Commission's experience," as briefly recorded by Dr. Hogg, showed how labour disputes and stoppage of production affected one industry and then another until nearly all the sources of supply available to Hydro were closed off. It was the practice of the Commission to order certain standard supplies well in advance of requirements, and thus it had been able to carry on with a certain amount of construction work. There was, however, a limit to what could be done. Unless materials were soon in better supply, a serious situation might well develop.

Rural Programmes

Dr. Hogg stressed the importance of the Five-Year rural programme. If supplies and labour were available in sufficient quantities, the success of this plan for rural extensions would be assured. So far as labour was concerned, the situation was being successfully met by the special

(Continued on page 25)

MAKE PLANS TO EXTEND RED SEAL PROGRAMME

To Assure Added Comforts And Conveniences To Consumers Throughout Ontario

Plans are now being made for extension of the Electric Service League's Red Seal programme throughout Ontario—a programme which will be put into effect as soon as conditions permit.

This fact was brought to the attention of delegates to the Eastern Ontario Municipal Electric Association at the annual meeting at Kingston on September 19.

In discussing the preliminary work being done at present, George Austin, the general manager of the newly-formed Electric Service League of Ontario, stated: "We are now organizing to carry out educational programmes in the field in order to prepare and train those who are involved." On the basis of past performance, Mr. Austin pointed out that the extension of the Red Seal plan of electric wiring throughout the province should pay big dividends in added comforts and conveniences to consumers and in increased business to the electrical industry.

Caused Great Furore

The origination of the Red Seal plan, Mr. Austin recalled, caused a great furore in the electrical industry in 1923. Houses all over the continent were being insufficiently wired—lacking in adequately-sized services, panels, circuits, and in outlets and switches. The majority of electrical contractors were content to take orders on a slap-dash basis, the speaker stated. There had been no established guide to indicate what could be considered a good wiring job, and there had been no unity of thought or experience on the subject. It had been an enormous gain for the industry to settle down to work out a minimum wiring standard, which all contractors and most builders could understand.

Progress Of Plan

Reviewing the progress of Red Seal wiring in Toronto, the speaker stated that in the first year of the plan's operation—1924—there were only 600 Red Seal jobs put in. In 1930 the League was operating at the rate of 3,500 Red Seal homes a year. About that time 80 to 90 per cent of all homes under construction in the Toronto district were being wired according to Red Seal standards, and there were 400 speculative builders who signed agreements with the League to

have all their houses for the year comply with the Red Seal standard. Whereas the average number of outlets in a house in 1923 was around 30, by 1930 it had risen to 60. All these Red Seal homes, it was explained, had 180 or 140-ampere services, 100-ampere switches, 8-circuit panels, and range wiring to the kitchen.

"In the Toronto district alone," said Mr. Austin "there are now 33,500 certified Red Seal-wired homes. These homes have a total of about 1,500,000 outlets. This is an average of 58.78 each—a tremendous number of small homes and apartment suites being included—and all have range wiring to the kitchen."

Benefits Are Shared

The value of all this wiring, Mr. Austin succinctly pointed out, was not at all confined to the sale of the wiring, itself. It lay even more in the facilities provided for the use of electrical equipment. The benefits derived from these were shared by the consumers and the electrical industry. The consumers were able to employ more appliances and apparatus and thus modernize their homes. Red Seal laid the foundations for range installations, for new uses of lamps in lighting and decoration, and for an increased use of the many devices which added to good-living and the comforts of life. From the point of view of increased business to the electrical industry, a tabulation made for 1943 showed that

adequate wiring in the area where the League carried on its work actually represented to all concerned—manufacturers of wiring and appliances, selling agencies, contractors, etc.—a gain of \$14,000,000.

Awake To The Need

Over many years, Mr. Austin said, the League had made a practice of taking a sample appliance census of one hundred Red Seal homes and one hundred typical non-Red Seal homes. The average Red Seal home had always about twice as much value in electrical equipment as the non-Red Seal home.

"The electrical industry," concluded Mr. Austin, "is more awake to the need and advantage of adequate wiring than ever before. That applies to both the United States and Canada. While material shortages are temporarily interfering, the eyes of electrical men are focussed on this great objective—complete and efficient wiring in all new homes."

Modelled On Toronto League

At the joint annual convention of the O.M.E.A. and the A.M.E.U. held in Toronto last March a resolution was adopted calling for the formation of the Electric Service League of Ontario, modelled on the Toronto League, and campaigning for more adequate electric wiring throughout the length and breadth of Ontario. This League, as intimated, is now planning its programme which will be put into effect as soon as possible. The League consists of representatives from The Hydro-Electric Power Commission of Ontario, the Ontario Municipal Electric Association, the Association of Municipal Electric Utilities, the electrical industry and electrical contractors.



CHATTING IN the lobby of the La Salle Hotel, Kingston, while awaiting the welcome call to the convention luncheon, are (left to right) Dr. Thomas H. Hogg, chairman of the H.E.P.C.; R. M. Durnford, president of the O.M.E.A. and G. E. Findlay, retiring president of the Eastern Ontario Municipal Electric Association.

SOUTHAMPTON

By Grace J. Carter

Asst. Editor, Hydro News

Situated on lake Huron, at the mouth of Saugeen river, Southampton is often called "Ontario's Summer Wonderland." And the miles of fine white sand that stretch along the shore make it an ideal vacation spot for the thousands of holiday seekers and tourists who do their "sun worshipping" on the beach.

Served by Hydro since 1931, this friendly community, in addition to its many fine town homes, has between 200 and 300 summer cottages which benefit very materially from low-cost Hydro power.

Fisherman's Paradise

It is said that Southampton is a fisherman's paradise, and if you know just the right spots you can catch black bass, pickerel and pike in the Saugeen river, and perch and herring in lake Huron. For those who like to "disturb the real estate" there is a nine-hole golf course close to the town, in fact only two miles away.

The first Hydro commission to serve this municipality comprised Major J. C. Tolmie, the mayor; and H. O. Bell and J. W. Burns, commissioners. The latter is still on the job.

The Southampton Public Utilities Commission is now serving 583 domestic, 91 commercial and 12 industrial consumers,

with an average monthly load of 750 horsepower, distributed over 22 miles of lines.

Since joining the Hydro family, Southampton has had a steady reduction in rates. In 1932, with an average domestic monthly consumption of 49 kilowatt-hours, the average cost was 3.8 cents per kilowatt-hour. At the present time the average monthly consumption of domestic

ably in the hope that the port would resemble and perhaps rival in importance its famous English namesake across the sea.

A Port Of Entry

Early in its history Southampton was a port of entry for the collection of customs and there was quite an extensive import and export trade. The harbour was enlarged and improved and a lighthouse was built at Chantry Island. This is a circular stone structure whose flashing light, located about 94 feet above



THIS WELL lighted school room is located at the back of the Hydro office at Southampton. Here the Grade I kiddies learn their A.B.C.'s.

consumers is 101 kilowatt-hours, and the average net cost per kilowatt-hour is 1.6 cents.

The financial position of the Southampton Public Utilities Commission reflects efficient administration and it is expected that the final debenture payment will be made in December, 1947. A small but capable staff administer the affairs of this commission. The chairman is J. W. Burns, and A. H. Parker and mayor Ellis Millard are commissioners; Margaret MacIver is secretary-treasurer and Norman Calder, superintendent.

First Settlers In District

According to historical records, the first settlers, Captain John Spence and William Kennedy, arrived in this area in 1848. The settlement was incorporated as a village in 1858, and as a town in 1904. For a number of years it was known as Saugeen, being the name used by the post office and customs house departments, while the crown lands department referred to it as Southampton. It was not, however, until about 1890 that it was officially named Southampton, prob-

high water mark, has been sending out its warning and guiding rays since 1859. Many stories have been told of the heroic rescues made by the lighthouse keeper and his family of shipwrecked mariners whose ships have been lost on the shoals surrounding Chantry Island.

250,000 Lake Trout

As might be expected, commercial fishing was the first industry of this town, but unfortunately due to some unknown force attacking the fish, this industry has been practically wiped out. They still retain the Ontario Government Fish Hatchery, however, and at the time of Hydro News' visit had 250,000 lake trout. The water used for these baby fish is electrically pumped.

A new industry which has opened up in this progressive town of some 1,600 (about 4,000 in the summertime) is the Dominion Plywoods Limited. This firm has developed a new and simplified technique for moulding veneer and plywood, a process involving the use of thermex high frequency electrostatic equipment which dries any number of thicknesses

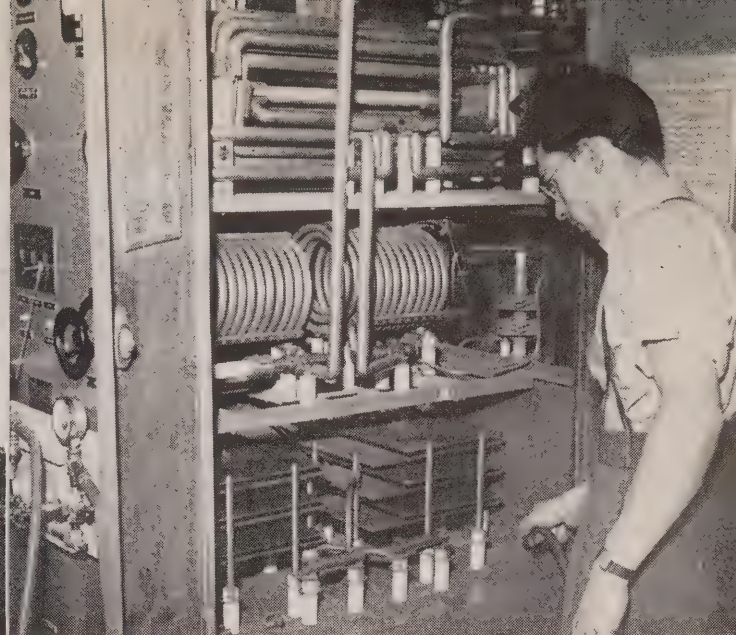
(Continued on page 22)



CRUISING ON lake Huron is a very popular pastime during the summer months. The photographer happened along when this boat builder was busy using an electric saw.



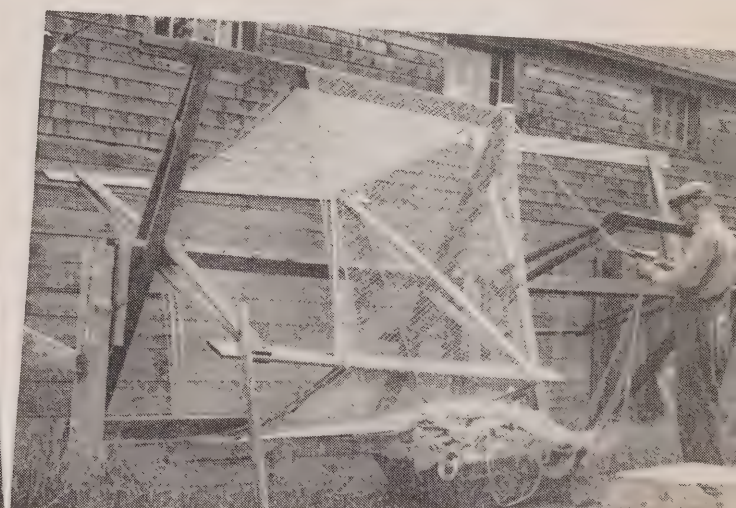
NORMAN CALDER, superintendent of the Southampton Public Utilities Commission, is shown repairing a transformer outside a summer home which faces lake Huron whose waters break on the nearby shore.



THE ABOVE thermex high frequency electrostatic unit is used in a new and simplified process of drying veneer and plywood. This technique now accomplishes in a matter of minutes what previously took hours to complete.

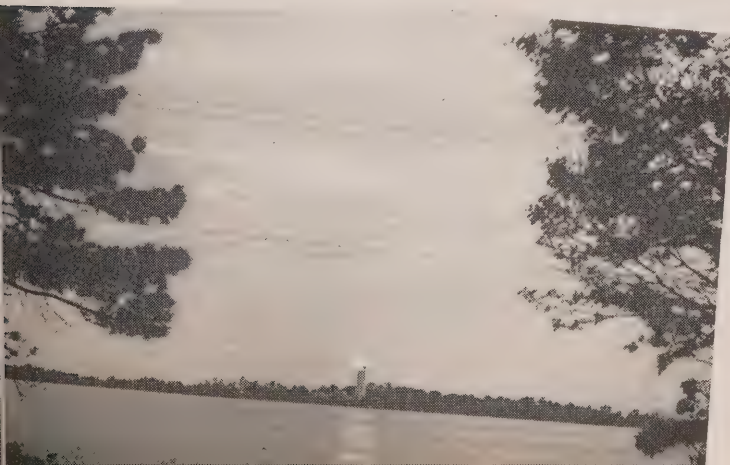


THIS SHOT was taken in the Ontario Government Fish Hatchery, and shows a few of the 250,000 young lake trout. The water supply is electrically pumped.



A TYPICAL scene that one might find in any fishing village. The Hydro News photographer caught this fisherman in the act of repairing his Gill herring net.

THIS NIGHT scene shows the lighthouse at Chantry Island, which has been flashing out its warning and guiding rays since 1859.



THESE CHILDREN are proud of a genealogy which establishes the Indians on the Saugeen reserve, near Southampton, as descendants of the original Ojibway tribe.



INDUSTRIAL UNREST MAY CREATE SERIOUS FUTURE POWER SHORTAGE

Commission's Entire Construction Programme Seriously Handicapped, Commissioner Challies Tells O.M.E.A. District No. 3 Gathering At Kenora

That industrial disputes may eventually bring about a power shortage in the Province of Ontario was the warning given by Hon. George H. Challies, vice-chairman of The Hydro-Electric Power Commission of Ontario, when addressing the Ontario Municipal Electric Association, District No. 3, at Kenora on September 4.

Speaking during the evening session, he pointed out that industrial unrest had seriously handicapped the Commission's post-war construction programme. If present conditions continued, he said, the inevitable result would be that the Commission would be unable to complete additional power plants and distribution facilities in accordance with its long-term programme.

Plan For Years Ahead

"The Commission's immediate task," Mr. Challies declared, "is to increase its generating sources." He pointed out that the Commission had to plan for several years ahead, and that a programme for the next few years had already been approved to provide for the construction of several new hydro-electric plants and associated extensions to transformer and transmission equipment. That programme, Mr. Challies stated involved an expenditure of approximately 110 million dollars, of which 50 million dollars represented construction of a major new development on the Ottawa river at the Des Joachims Rapids.

Work on the second unit at DeCew Falls, which will have a capacity of 70,000 horsepower, was now well underway, and the Commission was also proceeding with the construction of the new 54,000 horsepower development at Stewartville on the Madawaska river.

In the Thunder Bay district, Mr. Challies said, the Commission was building a 53,000 horsepower development on the Aguasabon river, east of Nipigon river, at a cost of 8½ million dollars. A further expenditure of 3½ million dollars would be required for transmission lines from this generating station to link up with the present Thunder Bay district network at Alexander Landing, and to increase the transmission line capacity between the Nipigon river power plants and the twin cities of Fort William and Port Arthur.

Another item of importance which had already been approved, declared Mr. Chal-

lies, was a 25,000-horsepower frequency changer station to be constructed in Scarborough township at a cost of 5 million dollars, including new lines. He explained that this project was designed to facilitate an interchange of power between the Eastern Ontario and Georgian Bay divisions and the Niagara division.

In all he said, new construction, when completed, would represent an aggregate installed capacity of 537,000 additional horsepower and involve the building of 573 miles of transmission and tie-in lines.

Mr. Challies reported on the work of the line construction gang which was now building about 61 miles of single and three phase line from Fort Frances to Barwick in the Rainy River rural operating area which serves the townships of Emo, Alberton, LaVallee and Chapple. When completed, the line will make Hydro power available to some 250 new consumers, including 95 farm users.

Continuing, the vice-chairman said, that Hydro was in a very strong position with respect to reserves, but cautioned those who might look with too envious eyes at the apparently large but very necessary reserves. Hydro, he said, was a very successful enterprise because it had been built on sound principles. Many factors had contributed to its success, the chief one, perhaps, having been its adherence to the basic principle of providing service at cost, remembering that cost, in the case of Hydro, included provision of reserves.

Must Be On Guard

"We should, therefore," he said, "be on our guard against even well-meaning people who might seek to change the established practice respecting their use."

In conclusion, the vice-chairman stated that The Hydro-Electric Power Commission of Ontario would continue, as best it could, to improve Hydro service and to meet the great increase in demand for power which was bound to come with settlement of the many industrial disputes which were at present retarding recovery and greatly increasing the difficulties of operating, maintaining and constructing Hydro facilities.

Hon. Wesley G. Thompson, minister of lands and forests, and game and fisheries, guest speaker at the evening banquet, in stressing the importance of Ontario's forests, said that there were still too few

people who realized or appreciated the part forests played in the province's economy.

In the western region, which comprised Sioux Lookout, Fort Frances and Kenora, the requirements for timber were substantial, he stated. The pulp and paper plants at Kenora, Dryden and Fort Frances used upwards of 300,000 cords annually. Also in the western area there were over 150 licensed sawmills.

The mining industry in Patricia, the speaker continued, would undoubtedly provide a market for increasing supplies of timber, and the new road now under construction would make this vast area more accessible. The iron development at Steep Rock, Rainy River district, would be another market for forest products.

Speaking of the province as a whole, Mr. Thompson said that in the past few years there had been a great expansion in the manufacture of pulp products. New mills now producing, were located at Espanola and Red Rock. The mill at Marathon was almost ready to start; arrangements were now complete for two new mills—one at Blind river and one at Terrace on the north shore of lake Superior, and from the many enquiries that had been received, it was likely that there would be still further expansion in the pulp field.

The minister of lands and forests said that they had embarked upon a programme to obtain a complete inventory of the timber resources of the province, which was a big job when it was realized that there were over 100 million acres to cover. However, the work was going along according to schedule and it was expected that the job would be completed in five or six years.

Cause Of Forest Fires

In conclusion Mr. Thompson said, that human carelessness continued to be the chief cause of forest fires, and urged that the users of our forests be educated as to the consequences of carelessness. He pointed out that the Lands and Forests Department maintained some 300 look-out towers, an airforce of 28 machines, 5,000 miles of telephone line, some 200 radio sets and employed during the period of high fire hazard, over 1,000 men, and there were still too many fires.

"These forests of yours," he said, "should not be taken for granted, and I am glad to say the staff is out to attain maximum utilization of the forest resources and at the same time take whatever measures are necessary to maintain these forests as a perpetual asset."

W. Ross Strike, K.C., H.E.P.C. com-

(Continued on page 26)

QUESTIONS ARE ANSWERED AT HYDRO PANEL SESSION

Information On New Hot Water Heaters, Linemen's Training School And Other Subjects Given At Eastern Ontario O.M.E.A. Meeting

"Information on Hydro, Please" is becoming one of the features of convention agenda. In the form of a simple question period it was inaugurated years ago, but today it is an efficient, business-like way of discussing, without loss of time, matters not included in the regular programme. In order that questions may be answered correctly and expeditiously, a panel is formed of officials from various departments of The Hydro-Electric Power Commission of Ontario. One or the other of these officers usually has the answer to any question on the Commission's activities.

At the convention of the Eastern Ontario Municipal Electric Association in Kingston on September 19, the "information" panel comprised: commissioner W. Ross Strike, K.C., the chairman; commissioner George H. Challies; R. T. Jeffery, chief municipal engineer; G. F. Drewry, system engineer for Eastern Ontario, Wills MacLachlan, head of the employees' relations department, and M. J. McHenry, director of promotion.

Electric Water-Heaters

One of the most important questions asked the panel from the consumer's point of view was as to when the new electric water-heaters would be available. Mr. McHenry stated that orders had been placed for 5,000 of these units and that production was now under way. It was expected that it would be possible to make deliveries of samples to the municipalities in the near future. When they would be ready in larger quantities depended upon the availability of material for their manufacture. The new units would be complete with special tanks which, because of heavy duty construction and better galvanizing methods, were designed for longer life. These packaged units, Mr. McHenry explained, would be available in two sizes—30 and 40 Imperial gallons—and they would be equipped with strap-on electric heaters in 500, 600, 800 and 1,000-watt sizes. He also pointed out the new water heaters could be purchased from the Commission by the municipalities for installation in the premises of Hydro consumers. The

latter, in turn, could obtain them on a monthly rental plan in addition to the energy charge or they could be sold by the utility to the consumer who would pay an energy charge and be responsible for service and maintenance.

Trainees Make Good

Another question asked was as to what benefits had been derived from the Linemen's Training School. This was answered by Mr. MacLachlan, who pointed out that out of 221 young men who had taken the prescribed course, 150 were now back in line gangs and that excellent reports had been received about them from their foremen. The Commission's course was quite a stiff one, and yet, up to date, only eleven men had failed. Mr. MacLachlan urged the municipalities to take an increasing interest in the school. Only 12 municipalities had so far sent men for training — and only one in Eastern Ontario.

"Pick out a likely man from your line gangs who has had service with the armed forces," advised Mr. MacLachlan, preferably a man who has not had climbing experience and send him along."

Cause Of Low-Voltages

In answer to another query, Mr. Jeffery stated that the low-voltages occurring

here and there in the province were due in general to the overloading of transformers. Owing to the halt in material production, it was often difficult for the Commission to get delivery of the new equipment it required. In special cases, low voltage might be caused by lack of rainfall, which affected power production, itself. The only way to remedy this was to provide abundant sources of power. Developments at present being undertaken on the Madawaska river aimed to supply additional power resources for Eastern Ontario.

Five-Year Plan

It was asked whether or not, when materials were available, Eastern Ontario would be given priority in rural line extensions so that rural electrical services in this division might be brought up to the level of those obtaining in other divisions of Hydro's southern system. Mr. Challies explained that the quota for rural extensions was determined by the number of applications in relation to the total proposed mileage on file. Where saturation was low and applications high, priorities would naturally be given. The Five-Year plan was designed to cover the field in a fair and systematic way so that no area would be disregarded.

Other questions elicited the information that Ottawa would become a cost municipality on the same basis as other Hydro municipalities as soon as its old power contract expired at the end of this year; and that the plan for frequency change in Southern Ontario would be submitted to the municipalities in the near future.



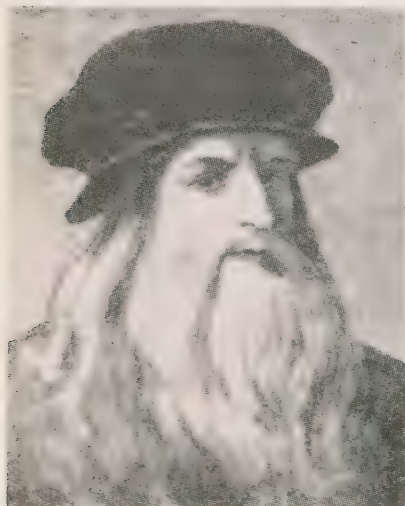
JUST BEFORE this shot was taken, these officers of the Eastern Ontario Municipal Electric Association had been invited to avail themselves of facilities provided for an air trip over Kingston. From left to right, they are (seated): M. P. Duff, O.M.E.A. representative, Belleville; Thomas A. Andre, president, Kingston; G. E. Findlay, retiring president, Carleton Place, and S. J. Babe, vice-president, Oshawa. (Standing): J. G. Baldwin, director, Lindsay; James Halliday, O.M.E.A. representative Kingston; W. B. Reynolds, director, Brockville; and H. B. Tully, vice-president, Kingston.



CHAPTER VII.—THE LAMP AFTER THE ROMANS

By Mildred C. Redmond,
Hydro News

One of the strange facts in the history of lighting is that not until after gas had become a fairly common means of lighting did the lamp attain any sort of efficiency as a source of light. In other words the lamp was well on the way out by the time it made any appreciable improvement over the most primitive designs dating from pre-history. Man's ingenuity had led him along many paths



ACKNOWLEDGED TO be the very first man to understand why lamps smoke—that great and universal genius, Leonardo da Vinci. Four hundred years ago he experimented with a lamp chimney but the idea was not followed up for another two hundred years.

towards a higher standard of living, but the problem of conquering the dark had to wait until almost our own time.

Another odd fact is that after the Roman civilization vanished the lamp dwindled in both design and workmanship and actually never again attained the same degree of craftsmanship and beauty. All that sort of care was lavished exclusively on the candlestick. In fact from the end of Rome right down to the 19th century the respective use of lamp and candlestick seems to have been one, generally speaking, of social caste. Candles were the exclusive property of the upper classes and the well-to-do; lamps of the more humble section of society. In the great houses, for example, candles would be used in the drawing rooms and living quarters, lamps in the kitchens and servant quarters. Considering that the lamps were fueled by either left-over rancid kitchen grease or else fish oil, it is not hard to imagine at least one very good reason why the privileged classes used them as little as possible. This same tradition carried over into the new colonies in America. Candles were both more expensive and more attractive so that they were used by the wealthy and by the more ordinary settlers they were kept for "company."

Crusie And Others

The lamps that were in common use in Europe through the Middle Ages and on down to the nineteenth century were mostly of three or four basic designs. One of the most common was the type that is known in Scotland as a "crusie." Reputedly Celtic in origin, it is a pear-shaped iron dish attached to an upright flat band at the back, the upright finishing in a swivel connecting it with a hook and spike so that it could be either hung from a rafter or suspended from the wall. Many of the typical examples had two bowls, one below the other to

catch the drip. In design they are definitely inferior to the Roman lamps. Over a long period they have been popular in northern Europe, especially in Ireland, Scotland and in the Orkney and Shetland Islands. It is reported that they are actually still in use in the remote Aran islands. They were also widespread through various parts of Europe, especially in the west from Scandinavia to Spain. In the south these lamps would burn olive oil, in the north fish oil or tallow.

The crusie also found its way to America and became the common lamp of the Pilgrims. Tradition has it that Captain John Carver, first Governor of the Plymouth Colony, purchased one of these lamps in Holland just before he



THIS WAS the discovery that was to revolutionize the lamp, Colonel Drake's first oil well dug in Pennsylvania in 1859. It marks the real beginning of commercialized oil production. (Illustration by Brown Bros.)



THIS LITTLE Victorian lady is probably putting her best efforts into "Oh, for the Wings of a Dove" or some other sad ballad. Overhead glimmers a group of candles but in the corner shines the very newest thing in lighting, a coloured glass lamp made to burn colza oil. (Illustration: Courtesy Science Museum, London.)

sailed for America, and it became the pattern for the popular "Betty" lamp. The Betty lamp had a support for the wick; a similar lamp but without the support was known in America as the "Phoebe" lamp. Oil for these lamps was mostly got from the swarms of small fish found along the New England coast.

Open Stand Lamp

Another European variation of the plain bowl lamp was what is known as the open stand lamp. It was actually a small oil bowl set on top of what looked like a tall candlestick. They never became popular in the British Isles but pottery ones both plain and decorated were used extensively in such various countries as Sweden, Hungary, Italy and Morocco.

Holland made these lamps of their favourite shining brass.

Another lamp pattern and something of an improved model was the spout lamp. It was a rather more sophisticated effort at design and looked, generally speaking, like a teapot with the wick coming out of the spout. Most southern European spout lamps were made of brass, in northern Europe they were of various materials, brass, pewter, pottery or tin, even of iron. They mostly belonged to the 18th and 19th centuries and were used with whale or colza oil. The popular Dutch name for them which might be translated as "dirty nose" probably described them fairly accurately. On the whole the rushlight and candle were the popular domestic lights in England.

However, one form of the spout lamp, known as a duck lamp, was used for work purposes, on farms, in mines, warehouses, factories and so on. One Dutch pattern of this lamp immigrated to America and evolved into the "Cape Cod" lamp which had the Dutch body, and upturned spout and was provided with a charcoal brazier underneath to heat the oil and keep it fluid.

Beginning Of Modern Lamp

Although various shapes had been tried in lamps since they first originated no one had ever thought of trying the wick anywhere but at the edge of the bowl, (with the obvious exception of the floating wick) until the end of the 19th century. This experiment really marked the beginning of the modern lamp. The cent-

ral wick plus the new fuel, whale oil, made a considerably more efficient lamp than anything up to that time. America was particularly prolific in this design and there were many varieties, mostly in pewter, tin or brass and they usually took the form of cylinders on stems and bases like candlesticks. These lamps were known in Europe as well but never became as popular as they did here.

After the open wick, the next step was to find some means of making brighter illumination by multiplying the burners. Benjamin Franklin proved that a two-burner lamp of this type would give more light than two single-burner lamps and so lamps were made with double burners. An attempt to make one with three burners proved a failure.

Why Lamps Smoke

Although whale oil proved to be an improved fuel, the supply was limited and the price was high. This led to a more widespread use of lard oil. About 1830 the search for better fuel resulted in the introduction of camphene, a mixture of turpentine and alcohol. It lasted about 20 years and was never very popular because of its volatile nature and its explosiveness. Benzene, first discovered in 1825, was also used in the middle century, usually in small lamps of the central wick type.

In spite of these improvements, lamps still smoked and it took men a very long time to discover why!

A Universal Genius

The very first man to understand the mystery of combustion and of why a lamp smoked was the great and universal genius, Leonardo da Vinci. Four hundred years ago he came to the conclusion that to supply sufficient air to a flame there must be a draft and that to do this a chimney might be put over the flame, then the heated air would go off up the chimney carrying with it the carbon dioxide and water vapour and fresh air would come in from below with plenty of oxygen. And so the first lamp chimney was invented. It was made of tin and hung up above the flame. However, the idea wasn't really put to use for another two hundred years when a French apothecary named Quinquet had the bright idea of substituting a transparent glass chimney. But still he didn't

realize that the chimney could be set right down over the burner.

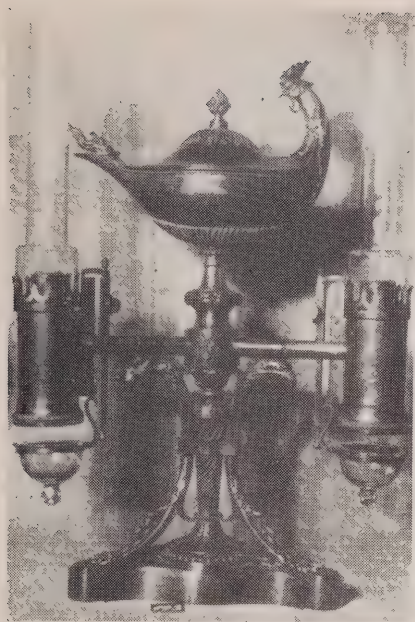
Used Pump To Force Oil

It was not until 33 years later, in 1784, that Argand, a Swiss realized what would seem to be this obvious fact and acted upon it. This was actually the first time in all the history of lighting that anything like an adequate artificial light had been produced. Other devices followed

quickly. For example, Karsel had the idea of using a pump to force oil into the burner. Karsel lamps of huge size are still used in some lighthouses. A Frenchman, Lezure, made the wick flat like a ribbon instead of round like a cord, finding that it smoked less. Then Argand thought of a better idea. He took a flat wick and rolled it into a cylinder, then he made a burner in such a way that the air could get at the flame from



COLLECTION OF early English and American lamps. (1) Lamp from 1600 made with graded glass oil reservoir to tell the time of day. (2) Dutch copper lamp 1640. (3) Pennsylvania Dutch iron lamp 1745. (4) English pewter 1708. (5) American "Betty" lamp 1724. (6) Tin lard oil lamp with reflector 1830. (7) "Betty" lamp 1766. (8) English pewter lamp 1770. (9) Tin lard oil lamp 1840. (10) English pewter lamp 1720. (11) - (12) - (14) Glass camphene lamps, American, 1845. (13) - (15) Whale oil glass lamps, American 1760 and 1830.



WHAT HAPPENED to lamps at the end of the 19th century when they were designed to be both expensive and elegant. This particular lamp belonged on the desk of Kaiser Frederick Wilhelm of Prussia.

both the inside and outside. This made the flame burn much brighter.

The public were enthusiastic over the new Argand lamp. However, like all improvements, it also had its enemies. One old lady, the Countess of Genlis, wrote that: "Since lamps came into style all the young people have begun to wear glasses. Only older people who read and write by candle light have good eyes." Thomas Jefferson is said to have imported the first Argand lamp into America for his home, "Monticello".

In spite of these important improvements the old open-flame lamp with the small wick held its own in common use right into the first half of the 19th century.

Search For Oil

But then another discovery came along that was to revolutionize not only the lamp but the daily life of everyone all over the globe, that is the discovery of mineral oil. From the very beginning man had been on the look for better fuel and had scoured sea and land to find it. Whale oil had been an important discovery but supplies of it were growing short. Colza oil, made from rape seed, was popular from about 1830 to 1860. Mineral oil was slow in being found. Herodotus and other early writers mention something that must have been

mineral oil but no one seems to have suspected that underground pools of it existed. Its actual use was discovered by Reichenbach and Dr. Christian simultaneously in 1830. In 1848 James Young discovered some oil in an English coal mine. He found it good for lubricating and began distilling the oil from shale found among the coal deposits. Germany was the country that did the pioneer experiments in the various uses of oil.

First Active Oil Well

In America, Colonel E. L. Drake studied the possible relation of geological formations in Pennsylvania to pools of underground oil. In 1859 he tried an experimental drilling which was successful and so became the first active oil well in history. With this wonderful and apparently unlimited new source of oil and with the cheapening of that oil, hundreds of American patents for paraffin lamps followed in the next few decades. The glass chimney became generally used, also an incandescent mantle was introduced where the oil was vapourized and mixed with air in a Bunsen burner before being burnt. The feeble, one candle power or less lamps that flickered their way through thousands of years were at last replaced by the new kerosene flames that gave ten to twenty candle power.

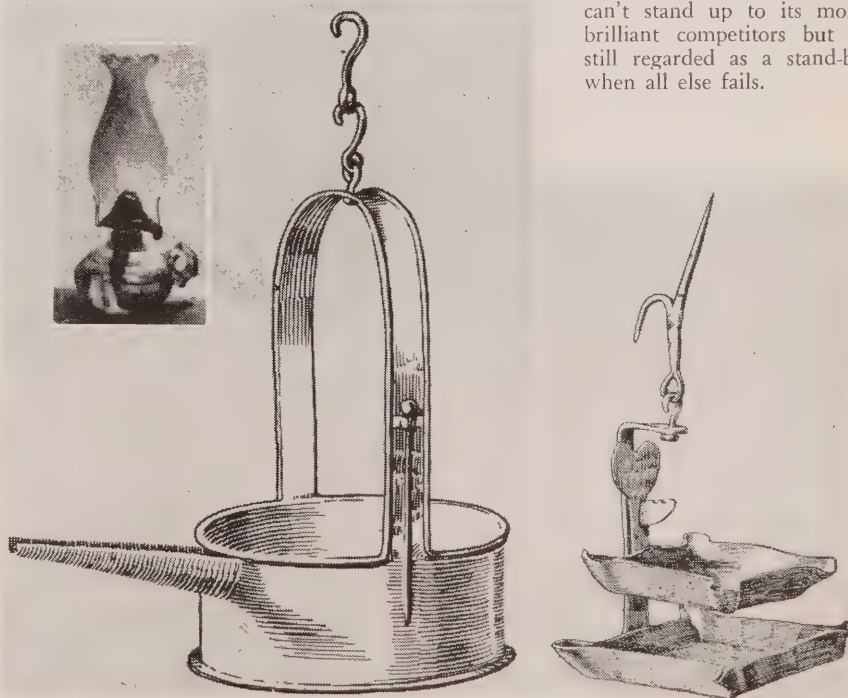
But the lamp, at the very moment of its attainment, was already doomed. As early as 1798 gas had lighted an English home and during the second half of the 19th century it became the accepted lighting. Also electric lighting was being tried out.

Lamp Was Poor Sister

The lamp not only failed as an efficient light source but it also failed as an aesthetically pleasing household object. As has already been noted, the lamp and candle during the earlier centuries took sides with the upper and lower stratas in society. All fine craftsmanship and good design were concentrated on the candlestick, candelabra and chandeliers. The lamp was the poor sister and was made of common materials and designed for utility only. In the 19th century when the lamp improved to the point where it became the accepted domestic lighting the design was still not good. For one thing designers never solved the problem of what to do with the oil reservoir. And for another, the century itself was one of bad taste so that when the effort to produce something elegant was made it was inclined to result in an elaborate and ugly piece like the lamp illustrated that belonged to Frederick William 2nd of Prussia.

Compared To Faithful Horse

In spite of the lamp's failure to compete with its rival lights it is still used in many parts of the world and is often called upon for emergencies right in our own country. One writer had compared it to the faithful horse; it can't stand up to its more brilliant competitors but is still regarded as a stand-by when all else fails.



LEFT: TINNED iron hanging lamp from 18th century England. It has a long uncovered spout for the wick to lie in. Right: typical Scottish "crusie" of iron and copper from the 17th century. Inset: the familiar glass chimneied kerosene lamp that is still widely used in various parts of the world.

MANY MUNICIPALITIES ESTABLISH ALL-TIME PEAK IN RECENT MONTHS

**Line Construction Greatly Curtailed By Material Shortages,
G. F. Drewry Tells Delegates To Eastern Ontario
O.M.E.A. Meeting At Kingston**

Increased municipal and rural loads in Eastern Ontario are more than off-setting the diminished demand for power by heavy industry which concentrated on war-time production, according to the report presented by G. F. Drewry, Hydro system engineer, at the meeting of the Eastern Ontario Municipal Electric Association held in the LaSalle Hotel, Kingston, on September 19. Instances, it was pointed out, could be recorded where municipalities had established an all-time peak during recent months, and this was to be accounted for by greater demands for power in all departments.

Construction of homes combined with extensions to factories and the increased use consumers were making of electricity had all contributed to the growth of load in the municipalities, Mr. Drewry stated. In the rural districts, too, consumers were making more abundant use of power. The Commission, he pointed out, had

been able to meet only a limited number of the many requests for new electrical services, because of the serious shortages of materials.

Tables Mr. Drewry had prepared showed that the total primary peak load excluding export for the Eastern Ontario division in August, 1945, was 165,779 kilowatts. The corresponding load for August, 1946, was 185,787 kilowatts, and since Mr. Drewry's address it has been revealed that the primary peak for September, 1946, was over 196,000 kilowatts! When one considered the reduction in power loads at several major industries served directly by the Commission, the new post-war power trend was almost startlingly discernable. Homes, farms, factories—all these were broadening and intensifying their use of electricity.

The upswing in municipal power de-

mand which had kept over-all load totals so close to the 1945 figures was well illustrated by statistics for seven of the principal cities and towns in the Eastern division. Taking Oshawa, Peterborough, Trenton, Belleville, Kingston, Brockville and Ottawa, Mr. Drewry showed that the power load for these urban municipalities in July, 1946, totalled over 85,230 kilowatts, while for July of last year the total was approximately 74,400 kilowatts. For all the municipalities in Eastern Ontario the total load was 116,000 kilowatts for July, 1946, as compared with 101,200 kilowatts for July, 1945. Rural load had increased from 17,400 kilowatts in July of 1945 to 21,600 kilowatts in July of the present year.

Improved Services Planned

Power sources for 60-cycle supply in Eastern Ontario were unaltered since the previous year, the speaker stated, except that a new contract entered into with the MacLaren-Quebec Power Company in-



MEMBERS OF the "quiz" panel at the convention of the Eastern Ontario Municipal Electric Association are wondering whom Hydro Commissioner W. Ross Strike, K.C., (standing) will pounce upon to answer a very involved question put by one of the delegates. Gathered around the table (left to right) are M. J. McHenry, Hon. George H. Challies, R. T. Jeffery, G. F. Drewry, Wills MacLachlan and M. W. Rogers, the convention secretary.

UPPER RIGHT—Registering at the convention which broke all attendance records for Eastern Ontario, is the veteran chairman of the Belleville Public Utilities Commission, M. P. Duff. At his left is A. G. Jennings, chairman of East York Hydro commission—a guest, who is hopeful of getting a few pointers from the wise men of the East.



UNMOVED BY the sting in the suggestion that he must be a champion at the parlour game of "musical chairs," C. B. Sutton remains comfortably seated, and, supported by his confreres, H. D. Biglow (immediately behind) and G. F. Harrington (extreme right) is prepared to back Millbrook against any municipality in Hydro's Eastern division. Trying to laugh it off are (left to right) George Jamieson, Newcastle; M. J. Elliott, Bowmanville; George Walton, Newcastle; W. C. West, Stirling; Roy Dodge, Cobourg; and others who hurried into the fray.

creased capacity from this source by 4,500 kilowatts. The capacity of all sources now totalled to 239,500 kilowatts. Electrical supply would be augmented with the completion of the 81,000 horsepower development at Stewartville on the

(Continued on page 24)

EGYPTIAN HYDRO CHAIRMAN PRAISES HYDRO IN ONTARIO

Hydro's type of organization in Ontario would be well adapted to Egyptian requirements.

This opinion was expressed by representatives of The Hydro-Electric Power Commission of Egypt and of the Egyptian government at the close of a recent two-day visit to Ontario where they conferred with Commission personnel and inspected Hydro plants at Niagara Falls and the Burlington transformer station.

Canada is one of six countries listed on the Egyptians' itinerary before returning to the land of the Nile and the pyramids, the other places of call being Great Britain, the United States, France, Sweden and Switzerland.

Members Of Party

The party included Dr. Abdel Aziz Bey Ahmed, chairman and director of The Hydro-Electric Power Commission of Egypt; and Mrs. Ahmed; Mustafa Fathy Bey, commissioner and undersecretary, Ministry of Public Works, Egypt; Mrs. Fathy and Miss Fathy; Khairy Bey, commissioner and director of reservoirs, Ministry of Public Works, Egypt; Abdel Moty Amer, Egyptian government; Mr. Dorra, Egyptian government, and Mrs. Dorra; and G. F. Kennedy of Kennedy and Donkin, consulting engineers, London, England.

The purpose of the tour, in addition to studying Hydro in Ontario, the Tennessee Valley Authority and Bonneville Power Administration in the United States and other hydro projects, was to provide additional information to firms interested in offering tenders on the Aswan Dam project which is to be constructed on the Nile, about 500 miles up the river from Cairo.

Egyptian Power Project

The new project which, it is estimated, will cost approximately \$40,000,000, will be used for industrial, municipal, irrigation and drainage purposes. It will have a total capacity of 280,000 kilowatts for nine months of the year with a firm capacity of 100,000 kilowatts.

The Egyptian government, it is reported, is to finance the Aswan Dam project and if an American firm were to get the contract, payment, it is pointed

out, could be made in dollars by using sterling balances which could be converted into dollars as a result of the recent loan by the United States to Great Britain.

While visiting the Commission plants at Niagara Falls, the visitors were accompanied by R. L. Hearn, chief engineer, design and construction; M. J. McHenry, director of promotion; A. H. Hull, electrical engineer; A. W. Manby, engineer, operations; and A. Aeberli, hydraulic engineering department.

Tribute To Hydro

Following conferences with Commission personnel and after seeing the Hydro plants, Dr. Ahmed remarked: "Your method of organization is extremely good. Of all the places I have seen so

far, I believe your type of organization might well meet our requirements."

ALL IN THE AIR!

"Much ado about nothing," snorted one authority questioned by Hydro News concerning the alleged earthquake which was supposed to have changed the contour of the American Falls on September 20.

According to reports, a very weak tremor was recorded on the seismograph at Canisius College in Buffalo, 23 miles away. This tremor was described as a "brontide" which is a sound in the air and not a vibration of the earth.

However, to cut a long story short, honeymooners who go to Niagara Falls, need not expect to find any apparent change in the contour of the American Falls. Seemingly, it was all in the air!



ACCOMPANIED BY personnel of The Hydro-Electric Power Commission of Ontario on a visit to Hydro plants at Niagara Falls, representatives of the Egyptian Hydro Commission and of the Egyptian government were greatly impressed by what they saw. Before leaving, the party lined up for this photograph. Back row, left to right, M. J. McHenry, director of promotion, H.E.P.C.; A. W. Manby, engineer, operations, H.E.P.C.; O. S. Luney, district assistant superintendent, Niagara Falls, H.E.P.C.; Khairy Bey, commissioner and director of reservoirs, Ministry of Public Works, Egypt. Front row, left to right, A. H. Hull, electrical engineer, H.E.P.C., and Abdel Moty Amer, Egyptian government (both seated); Mr. Dorra, also an Egyptian government representative; G. F. Kennedy of Kennedy and Donkin, consulting engineers, London, England; Dr. Abdel Aziz Bey Ahmed, chairman and director of The Hydro-Electric Power Commission of Egypt; Mustafa Fathy Bey, commissioner and under-secretary, Ministry of Public Works, Egypt, and (seated) L. W. Maybon, chief operator, H.E.P.C. at Queenston.

DOWN THROUGH THE YEARS

ELECTRICAL HISTORY PART 7

By Herbert C. Powell

Stories of the achievements of electrical pioneers in Canada are continued in the study of the following three men, outstanding in their respective fields:

Business Builder—Thomas Ahearn, 1855-1938, 83 years.

Industrial Enterpriser—Frederic Nicholls, 1856-1921, 65 years.

University Teacher—Thomas R. Rosebrugh, 1867-1943, 76 years.

Thomas Ahearn is an example of a few men in Canada who have combined the practical skills of the constructing engineer and the financial ability of the administrator; men who had the daring to try out something new, to explore the unknown, to overcome obstacles, failures, and handicaps. He was born in Ottawa, June 24, 1855, before the steam railways were operating. He was 12 years of age in 1867 when the confederation of Canada took place and the capital was located at Ottawa. His organizing talents were exhibited in his gathering together of successful athletes who competed in all types of sport. By the age of 15 he had learned telegraph operating; had an excellent knowledge of electricity and mechanics, and was exploring various scientific avenues. Continuing his studies in University of Ottawa, his mind was filled with the ambition of travelling through the nations. His ambition was gratified several times by world tours.

In 1882 at age 27, he started in business, Ahearn and Soper, Electrical Engineers and Contractors, with Warren Y. Soper, as his partner. For over 60 years this firm has designed and built numerous engineering enterprises in Canada, and is still going strong, the business being carried on by sons of the founders.

Mr. Ahearn started the telephone in 1878 in Ottawa for the Montreal Telegraph Company, and became the first telephone manager in Ottawa. In 1880 the Bell Telephone Company took over the telephone section of the telegraph companies. He continued as a director of the Bell Telephone Company, Montreal Telegraph Company and Northern Electric Company (started in 1882) until his death in 1938. He was indeed a telephone pioneer.

Contract For Arc Lighting

In 1881 Mr. Ahearn had started his first electric light plant, and by 1882 he

was supplying arc lighting in some mills in Ottawa. In 1883 a 20 horsepower steam plant supplied incandescent lights in the Parliament Buildings. In 1884 a steam engine driven dynamo in the laundry supplied electric lighting to the University of Ottawa. In 1885 the city of Ottawa signed a contract for the arc lighting of the whole city, thus the Ottawa Electric Light Company, founded by Mr. Ahearn in 1881, was off to a good start. By this time the Royal Electric Company of Montreal had started in 1884 making Thomson-Houston generators and arc



THOMAS AHEARN

lights. The Ottawa Company equipped a hydro-electric power plant within the city limits with Thomson-Houston generators in 1885.

Ahearn and Soper were selling and installing lighting systems far and wide. They met Edward Weston in New York and obtained one of Weston's new 550 volt direct current generators. They installed it in Ottawa and served direct current with five 110 volt lamps in series, along with an automatic switch for putting in another lamp should one burn out. In 1887 they formed the Chaudiere Electric Light and Power Company with one 550 volt D.C. "250 lighter" with two wires leading to a central distributing

point. Soon they had ten dynamos with ten pairs of wires to the central point. This "power house" continued till 1889.

In 1889 they superseded the Weston D.C. system with the new Westinghouse Stanley System, 133 cycles, 1,100 volts, with transformers supplying 50 volts from 1,100 volt primaries. Meters were used to measure the current and bills were rendered monthly. The D.C. system had operated on a flat rate basis; every lamp being billed up to Saturday night and paid by Monday morning. The D.C. system was purely commercial, operating from dusk to midnight. The A.C. system operated from dusk each afternoon until 8 a.m. next morning. The street light arc system was on a moonlight time schedule, not operating during moonlight.

Busy John Murphy

John Murphy operated this whole system, read the meters, prepared the bills, collected the accounts, started and stopped the generators, installed wiring and shot trouble, and was he busy? But he is still living, having served the Dominion Government in various electrical engineering projects over 40 years. He retired on June 17, 1938, and was acknowledged to be one of Canada's most outstanding pioneering electrical engineers.

In 1891 the Weston system was changed to a 500 volt power system, and the first 500 volt motor in Ottawa operated a baggage elevator in the old Russell House. In 1899 the 1100 volt, 133 cycle system was replaced by the polyphase 60 cycle, 2200 volt system.

In 1890, Ahearn and Soper organized and managed the Ottawa Electric Street Railway. It was the first street railway in Canada to demonstrate continuous operation throughout the winter months. In Montreal, some influential people were fighting against the use of electric railways, and claimed that horse cars and sleighs would never be superseded for winter operation. Mr. Ahearn invented electric heating for cars, and electric cooking apparatus for households.

In 1900 the great fire in Ottawa and Hull devastated vast areas including five small power stations. This hastened the remodelling of the electrical systems.

Mr. Ahearn continued his work until a short time before his death on June 24,

1938, at the age of 83. He was president of each of the utilities in Ottawa, as well as director of many companies.

Great Correlator

The achievements of Frederic Nicholls should be studied by every young man who is ambitious to advance in the executive line. He has been described as a great correlator, one who has successfully combined organizations into successful enterprises operating in every part of Canada, and having many foreign connections.

Frederic Nicholls was born in England on November 23, 1856, and obtained part of his education in Germany. He came to Canada in 1874 at the age of 18, spent five years in Ottawa, then arrived in Toronto in 1879. He was very studious, hard working, and liked to look a long way ahead.

John A. Macdonald became the new Premier of Canada in 1878 by his famous N.P. (National Protection) policy, with higher tariffs to develop Canadian industries. North America was in the midst of the severe major depression of 1873 to 1879, with vast unemployment and hardship. Mr. Nicholls studied the whole question of business, tariffs, protection, economics, manufacturing and related subjects, becoming an expert, and later was assistant to John A. Macdonald.

Opened "Permanent Exhibition"

In 1879 Mr. Nicholls became assistant secretary of the Canadian Manufacturers Association, then secretary in 1882. He bought an Ottawa paper, *Industrial World*, in January 1882, moved it to Toronto, at 6 Wellington West, renamed it "*Canadian Manufacturer*," and made it the official organ of the Canadian Manufacturers Association. He continued as secretary until 1890, and in the meantime carried on a variety of activities. He was his own editor, manager, salesman, collector, one week in the office, next week out hustling for subscriptions and selling advertising. In 1886 he opened the "Permanent Exhibition" on Front Street, where the present Union Station now stands, to sell all kinds of Canadian-made goods. He continued the Permanent Exhibition until 1891, at which location he carried on all his business.

Formed Syndicate

In 1888 Mr. Nicholls became deeply interested in electricity; formed a syndicate of ten men, each subscribing \$1,000 to study possibilities of electrical development in Canada. He organized the Toronto Incandescent Light Company on December 27, 1888, and the Toronto Construction and Electrical Supply Company about the same time. The Construction Company started immediately to build the Terauley Street generating station (now on Bay Street between Louisa and Dundas Streets), also to lay under-

ground ducts and cables (first underground in Canada). The Toronto Incandescent Light Company continued until 1896, when it was combined with Toronto Electric Light Company.

Made Great Headway

At that time, Thomas Edison was making great headway in Canada, having installed generators in Canada Cotton Company's plant in Cornwall, Ontario, which started February 28, 1883. In June, 1883, he put a plant in the Mail building, Toronto, for exhibition purposes. Another plant was started in September, 1883, in Montreal Cotton Company's mill at Valleyfield, Quebec. Edison opened a factory in Sherbrooke, Quebec, and later built a new factory in Peterborough, Ontario. In the meantime the Edison General Electric Company had been formed and sales offices were opened, such as the Edison office at 25 King Street West in 1890. Frederic Nicholls began to fight the Edison interests, which in itself is an interesting story, but it resulted in the Edison Company selling out to the Toronto Construction and Electrical Supply Company, and in the formation of the Canadian General Electric Company in September 1892, with a merger of a number of companies—Thomson-Houston, Edison, and Toronto Electrical Supply. The Ball Electric Company, which started in London, Ontario, in 1882, moved to Toronto in 1884

and was taken over by the Canadian General Electric Company in 1894.

Mr. Nicholls became associated with William Mackenzie in the Toronto Railway Company, Canadian Northern Railway, Electrical Development Company, Toronto and Niagara Power Company, and many other companies. Mr. Nicholls started the Toronto and York Radial Company in 1890, with electric street cars operating on the metropolitan division, Yonge Street. He also started the Niagara, St. Catharines and Toronto Railway, including the Navigation Company—Toronto to Port Dalhousie; Port Dalhousie to Niagara Falls.

Called To Senate

As head of the Canadian General Electric Company he opened factories and offices in many places in Canada, and has had a large share in the manufacturing and development of electrical apparatus for thousands of uses.

Mr. Nicholls was called to the Senate of Canada in 1917. He had almost boundless energy and great powers of concentration; and studied each problem thoroughly. He expected others to be as hard working and efficient as himself. He also had spare time interests—yachting; rod and gun; and collections of trophies and the study of history. He travelled extensively and took a keen interest in many industries, companies,



KNOWN AROUND the campus as the "little red school house," and familiar to all engineers who attended the University of Toronto, the Engineering Building (above) became the second home of Thomas R. Rosebrugh, who was appointed Professor Emeritus of Electrical Engineering for the Faculty in 1936.



FREDERIC NICHOLLS

movements, and current events. He died on October 21, 1921, at the age of 65.

Professor Thomas Reeve Rosebrugh devoted his life to training engineers at the University of Toronto. He was born in Toronto in 1867. He received the Bachelor of Arts degree in 1887, the Diploma of School of Practical Science in 1889, and the Master of Arts degree in 1893, all in the University of Toronto. In 1890 at age 23 he joined the teaching staff, became head of Electrical Engineering in 1909; appointed Emeritus Professor of Electrical Engineering on July 1, 1936, and died on January 24, 1943, at the age of 76.

School Established

The School of Practical Science was established in 1877, and was linked with University College. In 1889, the school was affiliated with University of Toronto, and a principal appointed. In 1900 the Faculty of Applied Science and Engineering was established, and in 1906 the School of Practical Science became the Faculty of Applied Science and Engineering of the University of Toronto. In 1911 the three-year diploma course ended, and the four-year course for the degree of Bachelor of Applied Science came into operation.

Factory In Hog's Hollow

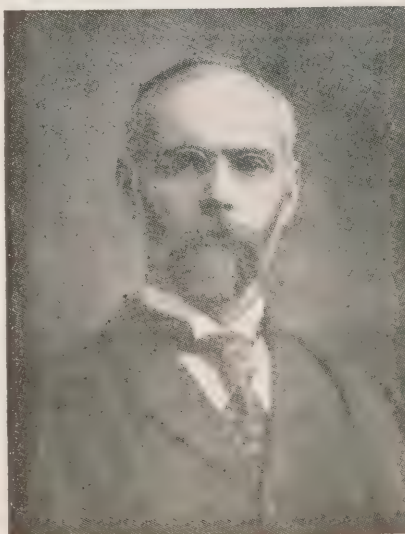
Professor Rosebrugh's great grandfather, William Reeve, had a factory in Hog's Hollow, North Toronto, making agricultural machinery, which was supplied by water power from 1830. His mother was the daughter of Dr. R. A. Reeve. His father was Dr. A. M. Rosebrugh, specialist in eye, ear, nose and throat, and also a specialist in electrical apparatus. Dr. Rosebrugh and Charles Potter, optician, installed the first tele-

phones in Toronto in 1877, between their homes on Charles Street East and their offices on King Street East. They also established the first telephone company, Toronto Telephone Dispatch Company in 1878. This was taken over by the Bell Telephone Company in 1881.

As a boy, Thomas Rosebrugh helped his father in making electrical experiments, especially the telephone. He was also particularly good at mathematics. Father and son, through the years, made discoveries and inventions, one of which was "Multiplex Telephony," a phantom extra circuit, enabling more messages to pass over a given set of wires. This was finally patented on August 2, 1894, (Patent No. 46713), and sold to the Bell Telephone Company.

Devised "Phorograph"

From 1890 Professor Rosebrugh progressed in mathematics. In that year he devised and named the "Phorograph," a method now widely used in the study of machine motions and velocities. He has also done notable work in the mathematics of electrical engineering. He calculated and tabulated extensive tables of exponential integral and related functions in 1903 in co-operation with Professor W. Lash Miller. In the paper, "The Calculation of Transmission Networks," published in 1919, the first application of matrices (mathematical term) to electrical engineering appears to have been made. In 1927 he produced an advance in pure mathematics, "A general theorem on quantic determinants." Another paper in 1930, "The analytics of transmission calculations," is a complete analysis of all circle diagrams and real-quantity calculations of transmission circuits. Some of his papers were published by the Royal Society of Canada, for which he was



THOMAS R. ROSEBRUGH

elected a Fellow in 1931. In 1936 he received the degree of Doctor of Science from the University of Toronto.

Professor Rosebrugh was a real pioneer in the teaching of electricity and mathematics to engineers for 46 years, 1890 to 1936, during a time of tremendous changes and advances. Many of his "boys" have made, and are making extraordinary contributions in Canada, United States, and all parts of the world.

Appointed Emeritus Professor

In 1936, Professor Harold W. Price became head of Electrical Engineering at University of Toronto, having been associated with Professor Rosebrugh for 35 years, and he continued in that position until July 1, 1946, when he was appointed Emeritus Professor. Professor Price recently received from the King of England the M.B.E. for meritorious contributions in research during the recent war. In 1935 he was awarded the McCharles Prize for his achievement in successful control apparatus for frequencies in electrical systems.

This series will be continued.

SOUTHAMPTON

(Continued from page 10)

of plywood in a matter of minutes. Prior to the installation of this electrostatic machine, the process required hours to complete. During the war, plywood was used extensively in aircraft. Now it is used for all types of furniture, office panelling and fixtures, household equipment and for many other articles.

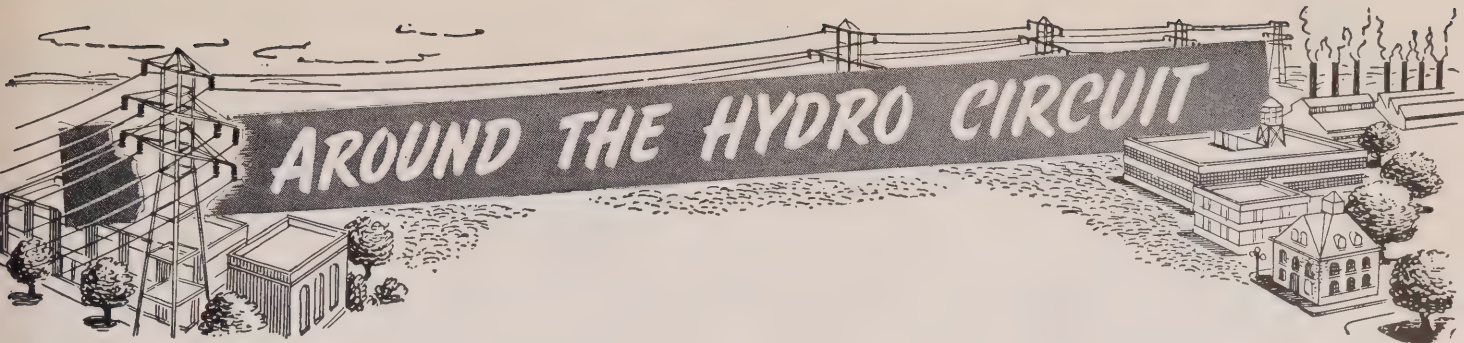
Other leading industries which benefit from low-cost Hydro power are the three furniture factories and others.

Many Fine Buildings

The visitor to Southampton is impressed by the quiet grandeur of its many fine homes, some of which resemble miniature castles in architecture and design. There are also many fine buildings, stores, schools, churches, hotels and a modern theatre. Recreational facilities include tennis courts, bowling greens, canoeing, yachting, curling and a skating rink.

Another point of interest to the visitor is the Saugeen Indian reserve, located just outside the town, which is reported to be the original hunting ground of the Ojibway tribe. Here these descendants live and follow British traditions and earn their living by selling rustic furniture, souvenir baskets and other native handicraft.

Easily accessible on the Blue Water Highway, Southampton is truly one of Ontario's beauty spots.



CH(1)EF MAGISTRATE



Although, comparatively speaking, a newcomer to Southampton, Mayor **ELLIS MILLARD** "knows his way around." He has been very aptly described as "up-and-coming."

That he usually knows "what's cooking," is indicated by the above photograph taken by the Hydro News' photographer beside the outdoor fireplace at the mayor's home. His dog, rises to the occasion for the benefit of Margaret MacIver of the Southampton Public Utilities Commission.

Born in Vancouver, B.C., in May, 1896, he attended school there, and served in the First World War from start to finish.

In 1944 he was elected to the Southampton council, and has served as mayor since 1945.

Mr. Millard has many municipal interests including the chairmanship of the Saugeen Memorial Hospital fund, and of the hospital's Board of Trustees. He is also a member of the Library Board, Parks Board and Cemetery Commission. During his spare time, if any, he likes to go fishing.

MARGARET MacIVER has been secretary-treasurer of the Southampton Public Utilities Commission for the past fifteen years. She was born and received her early education in Southampton, and also attended school at Owen Sound.

During her association with the Southampton commission, Miss MacIver has

built up a reputation for efficiency, and her quiet manner immediately inspires confidence in those who approach her.

SUPERINTENDENT

For the past fifteen years **NORMAN CALDER** has been superintendent of the Southampton Public Utilities Commission, and he is kept mighty busy trying to keep everybody happy, particularly in the summer season when between 200 and 300 summer cottage services come on.

Mr. Calder is a native of Linwood, Ontario, where he received his education. He has served five years on the Parks Board.

While at school, he won considerable distinction on the gridiron; now his spare time is taken up with carpentry.

CHAIRMAN BURNS



JOSIAH W. BURNS has been on the Southampton Public Utilities Commission since its inception in 1931, and during that time he has been chairman for ten years, which office he now holds.

He was born and educated in Southampton, and from 1917 to 1926 he served as town treasurer.

Mr. Burns, who has recently retired from the business world, finds relaxation in fishing and gardening.

MEET HARRY SMITH



For over 26 years, **HARRY HART SMITH**, the blacksmith for the Hydro-Electric Power Commission at the Queenston Chippawa plant, has been forging ahead.

And speaking about Mr. Smith, Hydro News learned it was he who devised a new plan for making rock drills that were used in helping cut out the canal which brings the water to the Queenston plant. Born in Cape Breton Island in 1891 where he attended school, Mr. Smith served his apprenticeship and mastered his trade in both Sydney and Montreal. He came to the Commission as a tool maker and has invented several dies and tools which have proved their respective merits. Because he is mathematically-minded, Harry Smith took up bridge as a hobby and in a big way. He has played in several international tournaments and is a recognized authority on The Blackwood Convention. Fishing, too, is another sport in which he excels. His automatic, multi-toothed gaff, which he made in his spare time, assures him that none of the big 'uns will ever get away.

For any one who is interested in metalcraft, Harry Smith's shop, which is located in the shadow of the big power house, is a pleasant and exciting place to visit.

TRIBUTE TO "BUD" MANBY



On September 9 a happy event took place in the Commission's Administration Building, Toronto, when A. W. "Bud" Manby received a presentation from his associates in honour of the completion of 25 years' service. It took the form of an illuminated scroll bearing the names of his associates and also two very fine Canadian oil paintings by Frank E. Cavell, A.O.C.A. "Silent Forest" and "Virgin Lake."

Served In World War I

Mr. Manby is a native of Niagara Falls where he received his early education. After graduating from the local collegiate he started the engineering course at the University of Michigan. Part way through his course during the first Great War he came back to Canada to join the Navy and later entered the Flying Corps which became the Air Force. He spent one year as flying instructor in Texas and was then sent overseas. At the end of the war he returned to the University of Michigan where he graduated in engineering in 1921.

In the same summer he entered the Commission in the electrical construction department at Queenston, later transferring to the operating department. After remaining at Queenston for ten years he was sent to Chats Falls as the superintendent of the plant when it was started.

Three years later Mr. Manby was brought back to Toronto to take over the work of chief operator of the Niagara system. In 1938 he was made assistant

to H. C. Don Carlos and in 1942 he became assistant to John Dibblee, chief engineer, operations, which position he holds at present.

In his leisure hours Mr. Manby has made quite a name for himself as a fisherman and duck and partridge hunter. In pursuit of these sports he has travelled over wide regions of this country. It is also rumored that he is no mean hand at bridge.

Handsome Presentation Scroll

The handsome presentation scroll with 101 names of those men throughout the Commission who have been in close contact with him bears this Tribute: "On completion of twenty-five years of service with The Hydro-Electric Power Commission of Ontario, your fellow members of the staff desire to record their deep appreciation of the long and happy associations with you. It is their earnest wish that these pleasant associations may long continue and that in sustained health and strength you may enjoy many well-earned years of happiness." Mr. Manby's name has now been recorded on the roll of the Quarter Century Club.

ALL-TIME PEAK

(Continued from page 18)

Madawaska river. Coupled with the Stewartville development, transmission lines would connect with the Barrett Chute plant, and a high-voltage line would be continued through Peterborough to Oshawa. Planned construction in the Eastern division included a high-tension station in the southern district of Ottawa, which, it was expected, would be completed this year. The capacity of the high-voltage station at Trenton, the speaker added, had been doubled. It was now 30,000 kilowatts.

Referring to rural programmes, Mr. Drewry explained that while there were adequate labour and technical staff to carry out the proposed extensions, material shortages had greatly curtailed line construction. These shortages, moreover, affected new applicants for electrical services on already existing lines, due to the fact that the Commission was frequently unable to obtain some minor but necessary pieces of equipment to make the connections.

Low Voltage Problems

"The present situation causes discouragement," Mr. Drewry remarked, "be-

cause of the continuing requests for extensions to new areas, which must be held up for attention at some indefinite time in the future. The Commission has a long list of waiting applicants in the rural field. This is especially the situation in Eastern Ontario where our rural lines have not yet extended to every community. Well over 2,000 miles of line will have to be constructed to absorb the backlog that is being built up by the unfortunate conditions which prevail."

To Erect New Station

Everything that the Commission could do to improve the rural situation, Mr. Drewry intimated, was being done. In some instances the line extensions made from time to time in rural areas in Eastern Ontario had led Hydro into districts where low-voltage problems were encountered. In spite of the shortage of material and equipment, Hydro was attempting to solve these problems wherever it could. In the outlying area around Ottawa, for instance, a rural transformer station would be erected. This would be located at Metcalfe, just north of Winchester, on the 110,000-volt line from Ottawa to Cornwall. The new station would increase voltages over a large area, and the good news was that it would be in service before the end of the year.

Good Relations Important

Before Mr. Drewry presented his report, G. E. Findlay, president of the Eastern Ontario Municipal Electric Association, who occupied the chair at the meeting, had called upon R. M. Durnford, president of the Ontario Municipal Electric Association, to address the delegates. Mr. Durnford stressed the importance of municipal commissions cultivating both good employee and good public relations. Upon these depended to a large extent the success of the Hydro municipal system. Particular attention, he thought, should also be given to the problems involved in a uniform cycle frequency for the province and in the standardization of switches.

At the conclusion of the Association's business session the delegates repaired to the banquet hall where they were greeted by the Mayor of Kingston, S. J. Crawford, who outlined the programme that had been prepared for their entertainment by the Kingston Public Utilities. This included an air tour of the district and a visit to the St. Lawrence Waterways panorama, which had been loaned

(Continued on page 29)

PRESENT-DAY PROBLEMS

(Continued from page 8)

training of young men at the Commission's Linemen's Training School. The situation with regard to poles was also fairly good. Of other materials there was a definite shortage, and this had affected the first year schedules so that it had been necessary for the Commission to proceed on a district quota basis. In each district the Commission was endeavouring to use the supplies available to give the maximum service.

Discusses Construction Programme

After giving an over-all picture of Hydro rural development and the success it had achieved in the immediate pre-war years, Dr. Hogg referred to the progress under the Five-Year plan in the Georgian Bay and Eastern Ontario divisions.

In Georgian Bay there were at the end of October, 1945, 23,380 rural consumers served by 3,587 miles of primary line. From November 1, 1945, to July 31, 1946, 216 miles of line were constructed, serving 532 consumers, while no less than 2,240 consumers were added to existing lines. Miles of line awaiting construction totalled 1,226, and the signed applications awaiting service on these new lines numbered 3,507. To these must be added 1,462 signed applications which would have to be looked after by existing lines. The total of new consumers connected was 2,772, and there were 4,959 on the waiting list. This total of 7,741 was equivalent to a 33 percent increase over the number of consumers actually served by Hydro at the end of the last fiscal year.

Rural Users In Eastern Ontario

In Eastern Ontario there were 33,570 rural consumers served by 5,328 miles of primary line at the end of October, 1945. From November 1, 1945, to July 31, 1946, 280 miles of line were constructed, serving 753 consumers. Old existing lines accommodated another 2,341 new consumers. The miles of line awaiting construction were about 2,000. These lines would supply service to 7,000 consumers, to which must be added 1,762 signed applications awaiting service on existing lines. The total new consumers connected was 3,094 and the total applications still awaiting service 8,762—altogether, 11,856. This number represented a 35 percent increase over the number served at the end of the last fiscal year.

Apart from shortages of construction material, Dr. Hogg pointed out, there was one important limiting feature to the programme of extensions in rural areas. Owing to load increases, it was now imperative in many districts to increase the capacity of existing lines before satisfactory service could be given by means

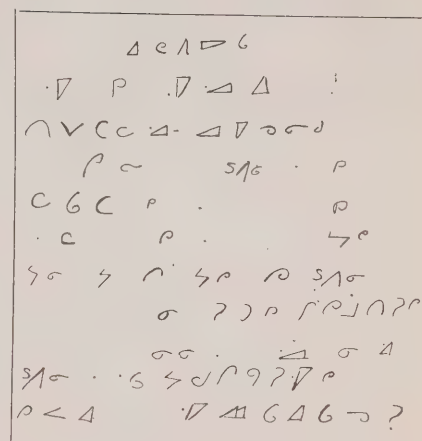
of further extensions. If this was not first looked after, services now being given would be impaired over wide areas.

"Hydro's problems," said Dr. Hogg, "have, if anything, increased since the war terminated. In the early stages of an uneasy peace, we find the difficulties of operating, maintaining and expanding Hydro's services greatly complicated by the difficulty in obtaining the needed supplies."

Still, the chairman of the Commission thought, it was satisfactory to know that there was such an increasing demand for electrical services. It implied a desire on the part of the people of this province to march forward—to progress.

"We are troubled just now," reflected Dr. Hogg, "because we cannot fulfil immediately our earlier post-war plans. Most of these plans are concerned with physical things needing both labour and materials. The present situation, I believe, will right itself if we learn to take life a day at a time, each doing his best with the task immediately to hand. For our part, we must continue to plan as best we can to improve Hydro service and thus meet the insatiable demand for power. If Canada continues to develop and put to beneficial use her vast supplies of hydro-electric energy, our country will again become a land of plenty and prosperity for all who are willing to work with good will and in that co-operative spirit which has been the mainspring of Hydro service in the past."

INDIAN SIGN



NO, THIS isn't a laundry check, but a notice that is hung in the Hydro line patrolmen's overnight cabins which are spaced every twenty miles or so along the transmission lines in the Patricia district. In case you are interested, it is written in Ojibway Indian sign language and reads as follows:

"Be careful with this cabin. It is owned by someone. You may use it if you have to. Keep it in good order. Clean it before you leave, replace wood that you have used. If anyone does damage and steals, a policeman will be told. If anybody does not do right, this cabin will be locked.—Hydro Electric Power Commission of Ontario."





CORDIAL RELATIONS which have existed between The Hydro-Electric Power Commission of Ontario and the Frontier College since the days of the late Sir Adam Beck are symbolized by this photograph showing Dr. E. W. Bradwin, principal of the College, and David Forgan, the Commission's construction engineer. Frontier college men have rendered an invaluable service along leadership and educational lines among the men at various Hydro construction camps.

FRONTIER MEN

(Continued from page 5)

sion's construction engineer, and his assistant, Gordon Mitchell, have been the contact between Hydro and Dr. Bradwin to make sure that instructors were part of every development where many men were employed.

Because the goal of the College is primarily good citizenship and education, no affiliation with any religious or political sects have been entered into. Naturally, men of all faiths have become teachers, and many of these men have followed up their education by entering the ministry.

A glance over past Frontier College registers of labourer-teachers reads like a "Who's Who" of Canadian affairs. It is against the policy of the College, however, to publicize an individual. As Dr. Bradwin put it; "We are the men who do our work in the back room, who contact the man who is too shy to be approached in any other manner and who is, sometimes, too proud to ask for help."

GEORGE PETERS PASSES

Formerly employed by the Hydro-Electric Power Commission of Ontario and widely known in the electrical field, **GEORGE PETERS** died suddenly at Los Angeles, California, on September 14.

As a young man he came to Canada from Manchester, England, and lived in Hamilton, where he was employed by the Canadian Westinghouse Company. In 1918 he joined the staff of the Commission and after that he became associated with Ferranti Electric Company Limited.

Mr. Peters was interested in sports and in his youth was a noted sprinter. Later in life he became known as one of the best English billiard players in these parts. He was an active mason, belonging to Dundurn Lodge A.F. and A.M., Hiram Chapter, Godfrey de Bouillon Preceptory of Hamilton, King Hiram, A.F. and A.M., and the Rameses Shrine in Toronto. He was also a member of the American Institute of Electrical Engineers.

Surviving are his widow and a daughter, Isobel.

INDUSTRIAL UNREST

(Continued from page 12)

missioner and past president of the O.M.E.A., stressed at the noon luncheon, the importance of the municipalities co-operating with the Electric Service League whose programme, which had been carried on in Toronto and immediate suburbs for many years, had now been extended to cover the Province of Ontario. One of the important functions of the League, he said, was to impress upon consumers the necessity of adequate wiring so that the householder would have the necessary number of outlets installed when he was having his premises wired.

Expect Capacity To Double

Mr. Strike went on to point out that Hydro was developing by leaps and bounds, and it was expected that in twelve or fifteen years its capacity would be almost double what it is today. With this increased development there would be increased responsibilities and problems for all the Hydro municipalities. There would be some practices now used that wouldn't cope with the increased development, and there would be regulations that wouldn't measure up to the new scheme of things, and he suggested that members of the O.M.E.A. be on their toes at all times, making sure that they kept abreast of the new developments.

The speaker declared that one could keep on trying old methods where the old methods just wouldn't work and suggested that problems should be tackled in the next few years with the thought that there was always a better way of doing things.

Mr. Strike pointed out that although low rates were admirable, the best possible service should not be sacrificed in order to have low rates. When people were using electricity, he said, and using it almost exclusively for many purposes, they were not nearly as interested in low rates as in uninterrupted service.

At the noon luncheon held at the Kenricia Hotel in Kenora on the first day of the convention, J. R. Pattison, chairman of the Fort William Hydro-Electric Commission presided, while the evening banquet was under the chairmanship of Lt.-Col. H. Cook, vice-president of District No. 3 O.M.E.A., and chairman of the Port Arthur Public Utilities Commission.

The second day of the annual meeting included a launch trip around beautiful Lake-of-the-Woods, with a stop-over at one of the islands for lunch. An informal closing dinner at the Kenricia Hotel rounded off another successful convention.

This year the meeting was sponsored by the Sioux Lookout Hydro-Electric System, Dryden Public Utilities Committee and the Kenora Public Utilities Committee.



Hydro

HOME FORUM

by Edithemmu Muir

HOME ECONOMIST

Autumn brings a new importance to home. It is the beginning of several "blanket" months of life. Everyone prepares for wintry weather while the atmospheric conditions warn us of doing outside jobs more quickly. Leaves scurry as we rake them over the flower beds; garden produce is packed into barrels and bins are heaped with sand; storm windows are fastened to fit tightly; overshoes are purchased for our protection; and woollen blankets are brought out for cosy comfort.

The use of Guatemala materials with bright colours on a black background can redesign a room and reduce worry of spots and splashes on the chair you cover, or the windows you curtain.

Not until after the durability tests were made on the new web chair would anyone believe such a chair could be practical. It is, and it's comfortable.

Many people (and I may be all of them) complain that potted ivy and other plants will not grow in an apartment. One Hydro horticulturalist says that greens should be planted in a clay pot and set in another urn. Place the first pot on one or two pebbles for ventilation purposes, being careful not to block the vent.

That last night in October was the time that ghosts appeared—and took all the cookies! We expected this might happen, because we admit those gingersnaps were good. Here's how you can make them: Heat one cup molasses slowly to boiling point. Put $\frac{1}{4}$ cup shortening in large bowl, pour hot molasses over it, stirring until melted. Add $3\frac{1}{4}$ cups sifted flour, $\frac{1}{2}$ tsp. soda, $\frac{1}{2}$ tsp. salt, $1\frac{1}{2}$ tsps. ginger, which have been sifted together. Mix thoroughly. Form dough into rolls; wrap in waxed paper and chill. Slice thin. Bake on greased sheet in hot electric oven 8 to 10 minutes.

Peanut Money: Farmers to the south of us are getting 10 times more from peanut sales now than they did back in 1932 (no small "peanuts"). Between Americans and Canadians, peanuts are being eaten one by one at the rate of 7 pounds a year per capita.

All but the Cackle! Some poultry plants are planning to make by-products. Lightweight and colourful trays have been moulded from finely ground chicken feathers mixed with binding material. Feathered thread can also be made. Other by-products include animal feed and fertilizer.

Grandma believes that there are not many troubles that can't be cured with a good, hot bowl of homemade soup. With so many good canned soups on the market, it isn't often Mrs. M. gets around to making vegetable soup at home, but when she does, the fragrance is as exciting as an Alfred Hitchcock mystery.

Variety is the spice of life, but we need variety of spices too. Dry some stalks of mint, sage, savoury and dill at this time of year. Dry until leaves or dill seed begin to fall off. Strip leaves from stems and rub between palms of hands until reduced to a powder. Store in perfectly dry bottles and cork.

Baked Squash: Wash acorn squash and cut in halves lengthwise. Remove the seeds. To each half, pack in a small amount of sausage meat. Turn down in pan. Bake in electric oven at 375 degrees.

Too many green Tomatoes? Don't let them spoil. Dip thick slices in egg and crumbs and fry them. Or add to stews and vegetable soups for a new flavour.

The Mexicans make a wonderful green tomato sauce they call molito. Cook together 1 cup meat stock (use bouillon cube), 1 chopped carrot, 3 onions, 12 green tomatoes, 2 red tomatoes, diced, $\frac{1}{2}$ tsp. chili powder, 2 bay leaves and

piece of garlic, some salt and pepper. Simmer an hour, sieve and add 1 tsp. butter. Bake eggs or meat balls in sauce.

If you have green tomatoes by the peck, don't forget mock mincemeat, piccalilli, chow chow, and other pickles.

You can't judge a book by its cover or a gift by its wrapping, but Christmas calls for a little make-up.

Come December if the cake and pudding are not already on your shelves, they're on your conscience. You can't put off the making much longer, not if you want them with their most luscious flavour.

A goose hangs high in favour for the Christmas feast. A nine-to-ten pounder makes a fine meal for about six people. Order early folks.

Darling, your stocking's twisted. A little sentence like this comes under the heading of Personal Remarks. Speaking from left to right with no deviations, remarks such as these are embarrassing. What the victim is hoping is that nobody will look until she reaches the Ladies' Fainting Room.

Who wouldn't like tarts of any kind but remember a pie shell takes less time and less shortening for the pastry. Most people lose time and we are short of shortening.

Double or nothing! Paper shopping bags are at a premium these days; so conserve them by strengthening. For example put one bag inside of another and then you'll have double protection.

They say that things look good only on the surface. It's not true if you make a good tasting cake and place one of those new frosting-covers on the top. You lift off this "lid", cut out a piece and recover. It also keeps the cake moist.

#his and #hat

By The Editor

AT THE outset, we wish to acknowledge the kindly and generous expressions received from many readers following publication of the last issue of Hydro News which carried the first article on public relations in this column. By way of acknowledgement, we would like to say that we are gratified to discover that there are so many Hydro folk who are sincerely interested in this subject. This is highly significant in that any organization whose employees are public relations-conscious as well as being faithful in the discharge of duties can build and maintain the goodwill of the people whom it serves.

Last month we pointed out that good appearance, good manne's and common sense are, in our opinion, the basic fundamentals to be observed by the person who is interested in doing a good public relations job. It should be emphasized that common sense implies there must be a spirit of sincerity associated with any undertaking which comes under the heading of public relations. People with whom one comes in contact in business life—and in social life for that matter—are usually quick to distinguish between a veneer of courtesy and sincere friendliness.

* * *

THIS BUSINESS of public relations is not confined to keeping the public informed concerning products and services and the personnel who handle these products and services. It can be something much more simple. For example, the employee who takes time out to see that a visitor to an office has been conducted to the department he or she is seeking has done a good public relations job for the company. A friendly smile, a pleasant greeting and a ready willingness to be helpful always create a lasting impression which the visitor will readily associate with a company when its name is mentioned. By the same token, a bored, disinterested attitude will be remembered to the detriment of a company.

In an organization such as Hydro—and this applies equally to the employees of the Commission as well as to employees

of Hydro municipalities throughout Ontario—there are unlimited opportunities for doing the finest kind of public relations job. At this point we would like to observe that it has been our privilege to meet hundreds of employees—both in the service of the Commission and in the municipalities—who are, without any fanfare, doing a very fine public relations job for Hydro. To these people we say: "Keep up the good work." To other employees who, by reason of a naturally shy and retiring nature may be ill at ease when they meet strangers, we would suggest that they patiently seek to overcome this handicap by not only mixing with as many people as possible but by taking up public speaking. One of our friends, now an advertising executive, who followed this policy, is today doing an outstanding public relations job for his organization, which is one of the largest in its field in Canada.

* * *

IN AN organization like Hydro, we feel that all employees, regardless of the work they may be doing, should be public relations-conscious. The lineman is "Hydro" to the folk he may meet on the road and his manner and attitude can either make friends or do otherwise. The man or woman to whom a Hydro consumer pays his bill for service is likewise in a position to foster goodwill as is the man who reads meters. One and all have a public relations job to do and the better they do it, the better for the Commission, the public whom they serve and for themselves. And now, we shall close the subject with this last thought: Public Relations are all the things one does to make friends for his organization in the hope of making more customers for a product or a service. That is why management cannot ignore public relations in all vital decisions. It presents a great challenge in the world of today for just as good public relations can foster goodwill for an organization, it can help foster both national and international goodwill. Like charity, however, it starts at home and home, in our case, means Hydro—Hydro so far as the Com-

mission is concerned and Hydro so far as the municipalities are concerned.

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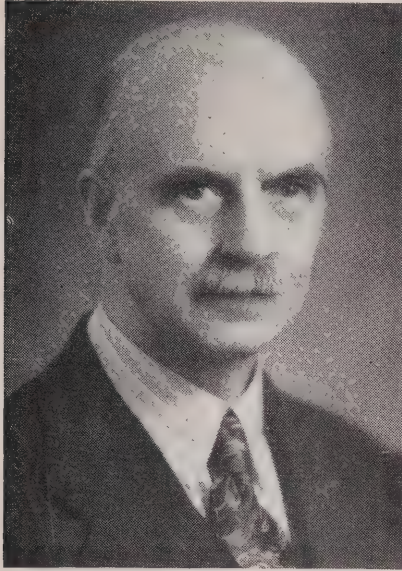
AT THIS point, we would like to turn this column over to our friend and colleague, Herbert L. Hickey of the promotion department, who batted out a story on an amusing incident he witnessed. Take over, Herb.

Drama turns up in the oddest places. Just recently, for instance, one of the stenographic offices in the Commission's head office building was the setting for an unscheduled bit of panic when a small, winged creature flew in through an open window and began to cut capers. For a few seconds he zoomed happily about, apparently unnoticed, performing aerial acrobatics to the relentless staccato rhythm of racing typewriters. Suddenly a young lady shrieked: "Look, there's a bat flying around the room!"

An atomic bomb would have created no greater excitement. All at once there were paralyzing screams and a furious rush for the nearest exit, which ran headlong into a counter-attack by several sturdy males who were racing to the scene from the opposite direction. For a moment, the doorway looked like a battlefield. Someone shouted: "Be careful, bats get into your hair!" to which a small, baldish man retorted: "Nonsense, that's been debunked."

"Well, can't somebody do something?" asked a trembling stenographer in troubled tones. One man calmly suggested phoning the library to see if they had any literature on bat eradication. Meanwhile, the panting little creature, feeling uneasy and somewhat outnumbered, had taken up a secure position near the top of the south wall, clinging fast as if suspended by the bootstraps. As if by magic, a side door opened and in rushed two men with a ladder. Spurred on by the cheering onlookers, one of them climbed up daringly, and gingerly pulled the bat from the wall with a large piece of cheesecloth. He trotted to a nearby window and let the creature take to his wings, once again free in the great outdoors.

HONOUR C. J. VICK



Twenty-four of the thirty-seven consecutive volumes on one of the shelves of the closely-packed bookcase in the well-ordered room adjacent to the library in the Commission's Administration Building in Toronto hold a very special interest for the occupant of that room, Charles Julian Vick.

This little-known fact was revealed on October 1 when he completed twenty-five years' service with the Commission and when he was the recipient of a handsome pen and pencil set—a tribute from his colleagues.

In making the presentation, Osborne Mitchell, the secretary of the Commission, mentioned a few of Mr. Vick's responsibilities, one of which was the assembling and editing of material for the Commission's annual report, recognized as one of the most complete publications of its kind.

Educated at one of England's smaller public schools at Hampstead and at one of London's engineering schools, he served a special 3 year apprenticeship course for professional students with the British Thomson-Houston Co. Ltd., at Rugby.

For three years he was in charge of the erection and operation of machinery, including a small hydro-electric plant at a gold mine in Colombia, South America. Coming to Canada in 1912 he became associated with A. V. White, consulting engineer to the Commission on Conservation and was engaged in field and office investigations concerning the water power resources of British Columbia. Upon dissolution of that Commission, Mr. Vick came with Mr. White, who had been engaged by Sir Adam Beck as consulting engineer to the executive of The Hydro-Electric Power Commission of Ontario.

Known as "a man of many hobbies," Mr. Vick's craftsmanship is reflected in the work he has done not only in improving his home and summer cottage,

but in the building of a 14-foot dinghy which he sails on Balsam Lake.

In Scarborough, where he resides, Mr. Vick has been active on the local school board and in other community activities.

ALL-TIME PEAK

(Continued from page 24)

to the city by the T. Eaton Company of Toronto.

Before going farther afield, the delegates paused to view the table-top model of a Hydro farm which had been set up in the lobby of the hotel. Much interest was shown in the adequate wiring display which forms an integral part of the exhibit. Four models of this farm have been made for exhibition in Ontario, and it is understood that another model is on its way for showing in Ontario House, London, England.

Officers Elected

During the short afternoon business session which preceded the entertainment features, officers for the coming year were elected as follows: President, Thomas Andre, Kingston; vice-presidents, S. J. Babe, Oshawa, and H. B. Tully, Picton; secretary-treasurer, W. H. Powell, Kingston; directors, George Baldwin, Lindsay; C. E. Pickering, Ottawa; and W. B. Reynolds, Brockville; O.M.E.A. executive representatives, Morley Duff, Belleville; and James Halliday, Kingston.

GOING UNDERGROUND

Lindsay has long been regarded as the gateway to one of the finest playgrounds and fishing districts in Ontario. Tourists and sportsmen who don't stay to become acquainted have been apt to consider this thriving town as just a place to pass through on the way to the blue-veiled hills and sparkling waters of their holiday dreamlands. The town has always worn a welcoming smile, and it has a nice way with callers. But if some of the visitors are only interested in a pretty face—well, Lindsay can arrange that for them. And Lindsay is doing that very thing right now.

"Yes, we're busy at it at this moment," J. Lightbody, manager of the Lindsay Hydro-Electric system, told Hydro News. "All the transformers and the primary laterals will be underground and also the secondary or service laterals. All poles, too, in the business district will be removed."

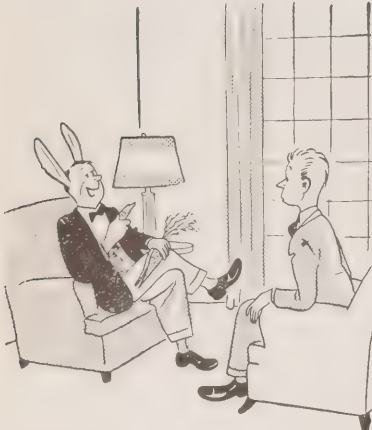
The secondary system at Lindsay, as reconstructed will provide a combined light and power service, which will be supplied to consumers at three-phase or single phase as required. Street lighting conductors in the business district have been underground for some time, but new standards will be set up.

Construction of the duct system of underground distribution, with man-holes and transformer vaults will take it is anticipated, about four years. The cost will run to about \$40,000.



MEMBERS OF the Adequate Wiring Committee of The Canadian Electrical Manufacturers Association were given an opportunity to get first-hand information regarding the Hydro rural display when they met at the head office of the Commission recently. Included in the photograph from left to right are: R. E. Bailey, Thomas and Betts Limited; R. D. Kerby, Canadian Electrical Manufacturers Association; N. B. Muir, Northern Electric Company Limited; R. A. Oldham, Federal Wire and Cable Company; H. V. Hobs, Renfrew Electric and Refrigerator Company; J. A. Blay, The Hydro-Electric Power Commission of Ontario; T. A. Lindsay, Phillips Electrical Works; F. R. Jeffrey, Crouse Hinds Company; M. J. McHenry, The Hydro-Electric Power Commission of Ontario; F. C. Eley, Canadian Electrical Manufacturers Association; R. J. Graham, Canadian General Electric Company Limited; P. G. Kirkpatrick, John C. Virden Limited; A. W. J. Stewart, Toronto Hydro-Electric System; N. E. Gerry, Amalgamated Electric Corporation Limited and D. S. Young Canada Wire and Cable Company Limited.

Lighter Lines



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"Nope! Eating carrots hasn't improved my eyes a bit—but, boy! I can hear a pin drop!"

*There was a young fellow named Weir
Who hadn't an atom of fear.
He indulged a desire
To touch a live wire—
(Almost any last line will do here!)*

The best thing about a popular song is that it's not popular very long.

Horse sense is what keeps horses from betting on what people will do.



"Questions! Questions! Questions! Why won't you just be satisfied with growing up to be ignorant like me?"

Some New Definitions:

Adult: A person who has stopped growing at both ends and started to grow in the middle.

Childish game: One at which your wife beats you.

Committee: A body that keeps minutes and wastes hours.

Egotist: A man who tells you those things about himself that you intended to tell him about yourself.

Fame: Chiefly a matter of dying at the right moment.

Firmness: That admirable quality in ourselves that is detestable stubbornness in others.

No wonder a hen gets discouraged. She can never find things where she lays them.

Clergyman: "Well, Mrs. Bradford, I must congratulate you on your little son's behaviour. I have never christened an infant who behaved so well."

Young mother: "Well, sir, William and me 'as been practising on him with a basin of water for a week and 'e's used to it by now."

It is with narrow-minded people as with narrow-necked bottles; the less they have in them the more noise they make in pouring out.—Alexander Pope.

And now rumour has it that some ingenious breeder has crossed a homing pigeon with a woodpecker and got a bird that not only delivers messages but knocks on the door first.

The wife who drives from the back seat isn't any worse than the husband who cooks from the dining room table.

She: Dearest, will you take father apart and speak to him?

He: Darling, when he hears what my income is I won't have to take him apart, he'll explode!

Waiter: "Yes, sir, we're very up-to-date, everything here is cooked by electricity."

Diner: "Then I wonder if you'd mind giving this steak another shock."



"Frankly, that girl isn't well, Tyson—I've called her for a date twelve times, and each time she's been ill!"

The best way to keep your friends is not to give them away.—Wilson Mizner.

"Uncle Mose," said a man one day to an old negro who was always cheerful in spite of his troubles, "how do you manage to keep so cheerful and serene?" "Well, I'll tell you, boss," replied the old man, "I'se, jus' learned to co-operate wid de inevitable."



"Yes, the traps are very annoying—will you please keep yours shut!"

HYDRO AT WORK ON THE FARM

LIGHTING



Obviously the first thing a farmer wants after he gets Hydro installed is light—light and yet again more light, to brighten every dark nook and cranny around the whole farm.

First of all light is both convenient and attractive. Chores are much less of a burden and can be done in less time when the person doing them doesn't have to grope his way about with a dangerous oil lamp and can really see what he is doing. And the whole place is so much more attractive for everyday living. Family evenings at home will be more of a pleasure with good light for reading or for working at hobbies. Good lighting in the yard and garage will make late home-comings no problem and will make a cheerful and hospitable welcome for guests.

One of the most important angles to farm lighting is safety. It discourages prowlers about the place and it helps to prevent accidents. There won't be any more stumbling over things in the dark or falling from dark haylofts; and of course the fire hazard from lamps is eliminated.

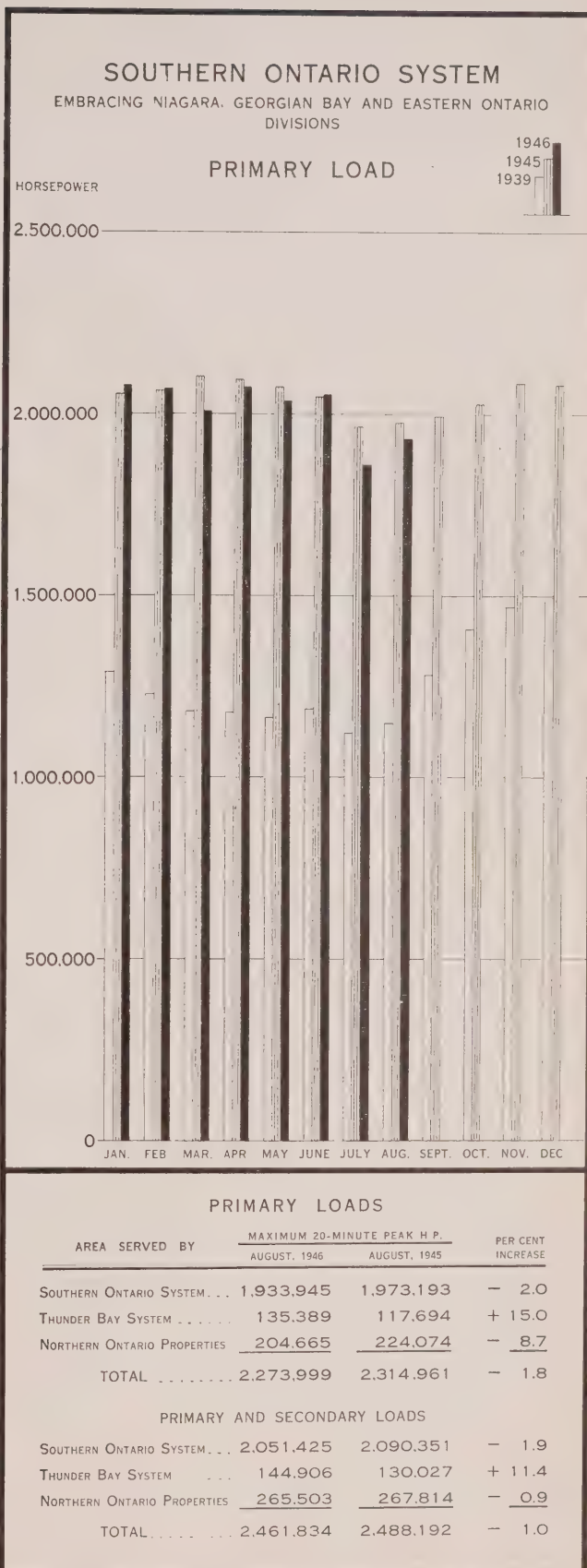
There is also the fact that good lighting actually helps farm output by speeding up the work and making it easier to get things done. This applies to the house as much as to the farm buildings. The farmer's wife will appreciate good light to work by as much as the men do in their jobs.

As an example of how light gives a direct production increase, it has been proved that light in the henhouse results in more eggs with stronger shells and greater food value.

In the barn or stable, lights are usually put in the feeding or cleaning alleys between the stalls. They should be placed one behind each stall or spaced not more than 12 feet apart.

The silo, granary and haymow should all be lighted with an angle fixture mounted high up so as to throw a good light over the whole area. The dairy, garage and workshop all need good light; in the dairy it is particularly important for light and cleanliness go together.

Each farm has its own particular layout and lighting problems and sometimes the farmer finds it difficult to decide just where the lights should go. At his local Hydro office he can obtain advice that will help him draw up plans which will assure him the maximum convenience at the minimum cost.



MUNICIPAL LOADS, JULY, 1946

SOUTHERN ONTARIO SYSTEM

NIAGARA DIVISION (25-Cycle)

	H.P.	Domes- tic Con- sumers
Acton	2,064	544
Agincourt	272	168
Ailsa Craig	203	147
Alvinston	148	205
Amherstburg	1,234	734
Ancaster Twp.	518	394
Arkona	79	117
Aurora	1,856	793
Aylmer	1,102	758
Ayr	341	227
Baden	658	168
Beachville	839	167
Beamsville	575	399
Belle River	271	314
Blenheim	655	560
Blyth	179	184
Bolton	326	172
Bothwell	151	185
Brampton	3,733	1,627
Brantford	23,183	8,337
Brantford Twp.	1,721	1,476
Bridgeport	264	178
Brigden	134	125
Brussels	243	256
Burford	379	235
Burgessville	100	64
Burlington	1,811	1,234
Burlington Beach	667	732
Caledonia	388	452
Campbellville	64	50
Cayuga	215	186
Chatham	7,381	4,575
Chippawa	372	364
Clifford	125	130
Clinton	892	593
Comber	170	120
Cottam	109	131
Courtright	55	91
Dashwood	149	102
Delaware	98	71
Delhi	546	609
Dorchester	132	157
Drayton	181	167
Dresden	566	466
Drumbo	145	90
Dublin	57	61
Dundas	3,073	1,458
Dunnville	1,617	1,063
Dutton	254	234
East York Twp.	9,601	11,918
Elmira	1,636	554
Elora	595	355
Embro	220	125

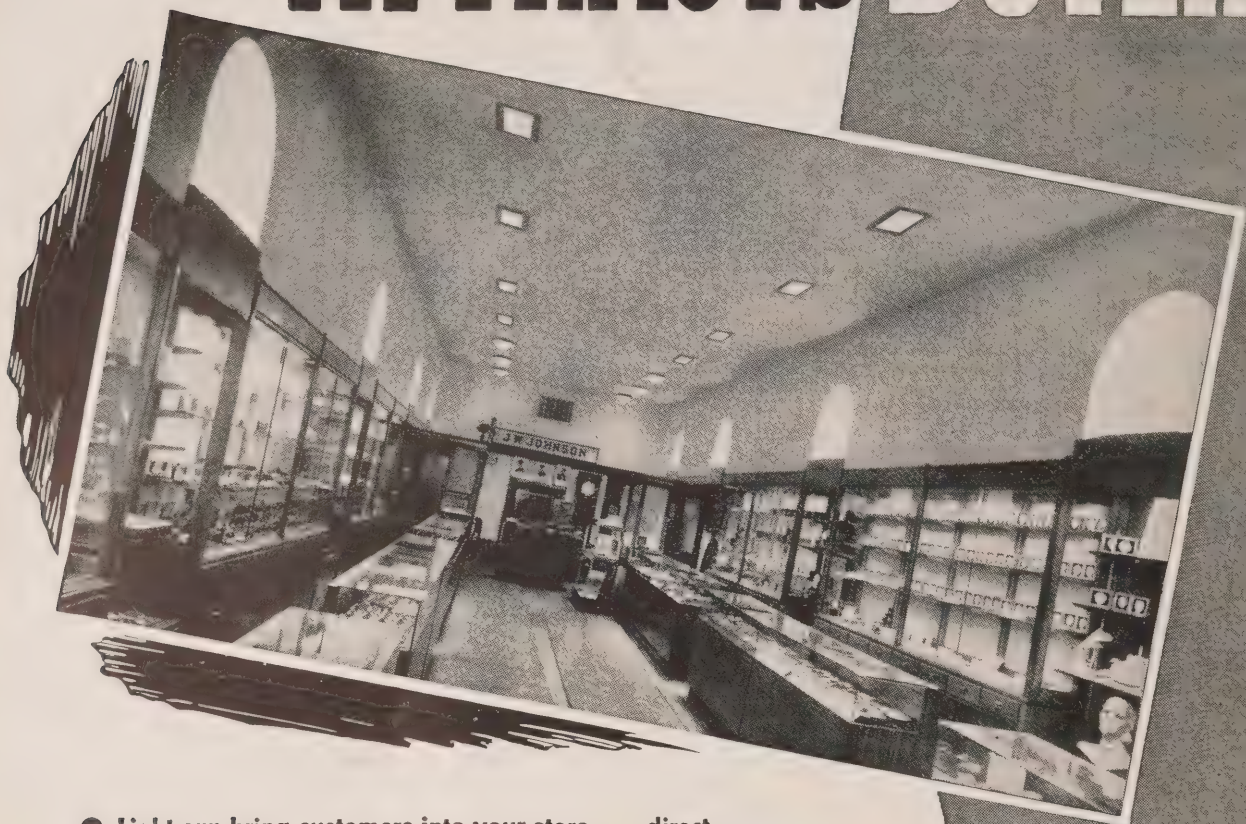
	H.P.	Domes- tic Con- sumers
Erieau	289	197
Erie Beach	56	79
Essex	782	528
Etobicoke	10,405	6,157
Exeter	1,024	544
Fergus	1,628	770
Fonthill	223	300
Forest	785	510
Forest Hill	4,912	3,567
Galt	12,493	4,296
Georgetown	2,411	833
Glencoe	233	230
Goderich	2,155	1,361
Granton	83	85
Grimsby	1,127	655
Guelph	12,428	5,703
Hagersville	1,302	406
Hamilton	132,354	43,700
Harriston	627	378
Harrow	712	350
Hensall	254	210
Hespeler	2,942	825
Highgate	115	107
Humberstone	565	738
Ingersoll	3,595	1,568
Jarvis	195	163
Kingsville	671	641
Kitchener	21,617	8,718
Lambeth	136	140
LaSalle	378	259
Leamington	1,906	1,688
Listowel	1,798	801
London	41,834	19,859
London Twp.	446	494
Long Branch	1,879	1,564
Lucan	249	186
Lynden	141	105
Markham	522	350
Merlin	106	124
Merritton	9,533	962
Milton	1,772	555
Milverton	540	263
Mimico	2,827	2,306
Mitchell	938	521
Moorefield	118	56
Mount Brydges	132	166
Newbury	57	70
New Hamburg	880	384
Newmarket	2,419	1,022
New Toronto	5,414	2,029
Niagara Falls	11,140	4,984
Niagara-on-the-Lake	1,130	623
North York Twp.	9,695	7,019
Norwich	573	391
Oil Springs	189	104
Otterville	146	143

	H.P.	Domes- tic Con- sumers
Palmerston	755	400
Paris	2,058	1,215
Parkhill	345	315
Petrolia	1,045	825
Plattsville	195	118
Point Edward	1,666	349
Port Colborne	1,710	1,655
Port Credit	1,032	649
Port Dalhousie	1,354	691
Port Dover	832	750
Port Rowan	129	171
Port Stanley	1,583	825
Preston	4,397	1,689
Princeton	200	98
Queenston	188	81
Richmond Hill	650	414
Ridgetown	607	599
Riverside	1,261	1,559
Rockwood	187	174
Rodney	158	239
St. Catharines	26,565	8,742
St. Clair Beach	130	102
St. George	234	154
St. Jacobs	406	141
St. Marys	2,302	1,076
St. Thomas	7,945	4,718
Sarnia	6,376	5,403
Scarborough Twp.	6,154	5,950
Seaforth	1,235	524
Smithville	331	185
Simcoe	2,877	1,678
Springfield	81	133
Stamford Twp.	3,388	2,497
Stoney Creek	288	289
Stouffville	579	408
Stratford	8,662	4,561
Strathroy	1,774	876
Streetsville	289	208
Sutton	765	468
Swansea	2,505	2,096
Tavistock	828	300
Tecumseh	571	711
Thamesford	300	147
Thamesville	281	243
Thedford	162	166
Thorndale	137	83
Thorold	3,127	1,274
Tilbury	928	502
Tillsonburg	1,801	1,243
Toronto	354,321	154,302
Toronto Twp.	4,290	3,065
Wallaceburg	5,572	1,387
Wardsville	56	65
Waterdown	345	280
Waterford	462	397
Waterloo	7,050	2,306
Watford	484	312

MUNICIPAL LOADS, JULY, 1946

	H.P.	Domes- tic Con- sumers		H.P.	Domes- tic Con- sumers		H.P.	Domes- tic Con- sumers
Welland -----	10,820	3,264	Neustadt -----	47	110	Iroquois -----	396	279
Wellesley -----	192	137	Orangeville -----	996	746	Kemptville -----	475	393
West Lorne -----	412	227	Owen Sound -----	7,972	3,663	Kingston -----	18,080	7,867
Weston -----	4,927	1,700	Paisley -----	227	202	Lakefield -----	535	360
Wheatley -----	252	237	Penetanguishene -----	1,422	773	Lanark -----	139	173
Windsor -----	46,241	26,909	Port Carling -----	391	211	Lancaster -----	46	116
Woodbridge -----	922	314	Port Elgin -----	881	509	Lindsay -----	3,996	2,289
Woodstock -----	8,277	3,448	Port McNicoll -----	157	241	Madoc -----	291	318
Wyoming -----	126	166	Port Perry -----	449	381	Marmora -----	156	249
York Twp. -----	18,532	21,946	Priceville -----	13	38	Martintown -----	65	56
Zurich -----	182	149	Ripley -----	149	129	Maxville -----	129	176
Bronte -----	(66½-Cycle)	59	Rosseau -----	70	58	Millbrook -----	156	182
Oakville -----	381	1,285	Shelburne -----	386	314	Morrisburg -----	514	444
Trafalgar Twp. -----	870	573	Southampton -----	840	567	Napanee -----	1,828	897
GEORGIAN BAY DIVISION			Stayner -----	443	341	Newcastle -----	285	230
(60-Cycle)			Sunderland -----	130	140	Norwood -----	276	242
Alliston -----	635	447	Tara -----	174	164	Omeme -----	305	173
Arthur -----	217	199	Teeswater -----	214	233	Orono -----	105	183
Bala -----	487	336	Thornton -----	57	67	Oshawa -----	20,179	6,765
Barrie -----	5,349	2,471	Tottenham -----	140	161	Ottawa -----	35,481	15,658
Beaverton -----	419	331	Uxbridge -----	515	423	Perth -----	2,083	1,110
Beeton -----	124	148	Victoria Harbour -----	126	271	Peterborough -----	18,524	6,702
Bradford -----	398	291	Walkerton -----	1,412	687	Pictou -----	1,776	1,336
Brechin -----	88	53	Waubushene -----	242	235	Port Hope -----	3,224	1,455
Cannington -----	378	262	Warton -----	500	437	Prescott -----	1,589	815
Chatsworth -----	115	108	Windermere -----	131	64	Richmond -----	115	85
Chesley -----	806	456	Wingham -----	1,206	560	Russell -----	112	119
Coldwater -----	229	159	Woodville -----	107	116	Smiths Falls -----	3,804	2,012
Collingwood -----	3,053	1,650	EASTERN ONTARIO DIVISION			Stirling -----	450	293
Cookstown -----	130	119	(60-Cycle)			Trenton -----	5,964	1,833
Creemore -----	240	176	Alexandria -----	428	415	Tweed -----	453	321
Dundalk -----	288	210	Apple Hill -----	62	66	Warkworth -----	91	135
Durham -----	562	464	Arnprior -----	1,554	891	Wellington -----	449	343
Elmvale -----	185	191	Athens -----	154	183	Westport -----	143	149
Elmwood -----	115	72	Bath -----	78	64	Whitby -----	1,854	1,054
Flesherton -----	115	126	Belleville -----	8,514	3,939	Williamsburg -----	133	86
Grand Valley -----	240	184	Bloomfield -----	202	181	Winchester -----	561	309
Gravenhurst -----	1,584	593	Bowmanville -----	1,901	1,234	THUNDER BAY SYSTEM		
Hanover -----	1,858	850	Brighton -----	693	563	(60-Cycle)		
Holstein -----	25	63	Brockville -----	7,505	3,101	Fort William -----	14,687	7,332
Huntsville -----	1,522	744	Cardinal -----	537	394	Nipigon Twp. -----	299	243
Kincardine -----	1,081	741	Carleton Place -----	2,370	1,076	Port Arthur -----	20,151	6,099
Kirkfield -----	27	37	Chesterville -----	439	248	NORTHERN ONTARIO		
Lucknow -----	555	287	Cobden -----	155	160	PROPERTIES		
MacTier -----	156	128	Cobourg -----	2,769	1,443	Nipissing District		
Markdale -----	249	231	Colborne -----	278	285	(60-Cycle)		
Meaford -----	1,148	757	Deseronto -----	329	395	North Bay -----	5,876	3,379
Midland -----	4,119	1,625	Finch -----	149	107	Patricia District		
Mildmay -----	212	184	Frankford -----	242	262	(60-Cycle)		
Mount Forest -----	794	502	Hastings -----	199	238	Sioux Lookout -----	330	512
			Havelock -----	170	295	Sudbury District		
						(60-Cycle)		
						Capreol -----	520	344
						Sudbury -----	9,804	8,734

GOOD LIGHT ATTRACTS BUYERS



● Light can bring customers into your store . . . direct them to any section you desire . . . then help to induce them to buy. This can be done through skillful use of various degrees of brightness on different surfaces. Light up those dull corners . . . spot-light "impulse" items there . . . and light will sell goods for you.

It is not recommended that you "flood" your store with light. Put two or three times as much light on special stock as on regular stock; and light up regular stock two or three times as brightly as the architectural features of the store. Relative brightness sells goods and pays dividends.

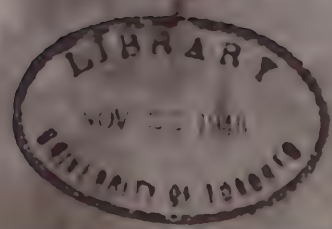
Good store lighting with low-cost Hydro is profitable. As a progressive merchant, you cannot afford to ignore good lighting. Yet, to avoid wasteful experiment, you should be guided by trained advisers. Consult a good lighting contractor, or ask your Hydro office.

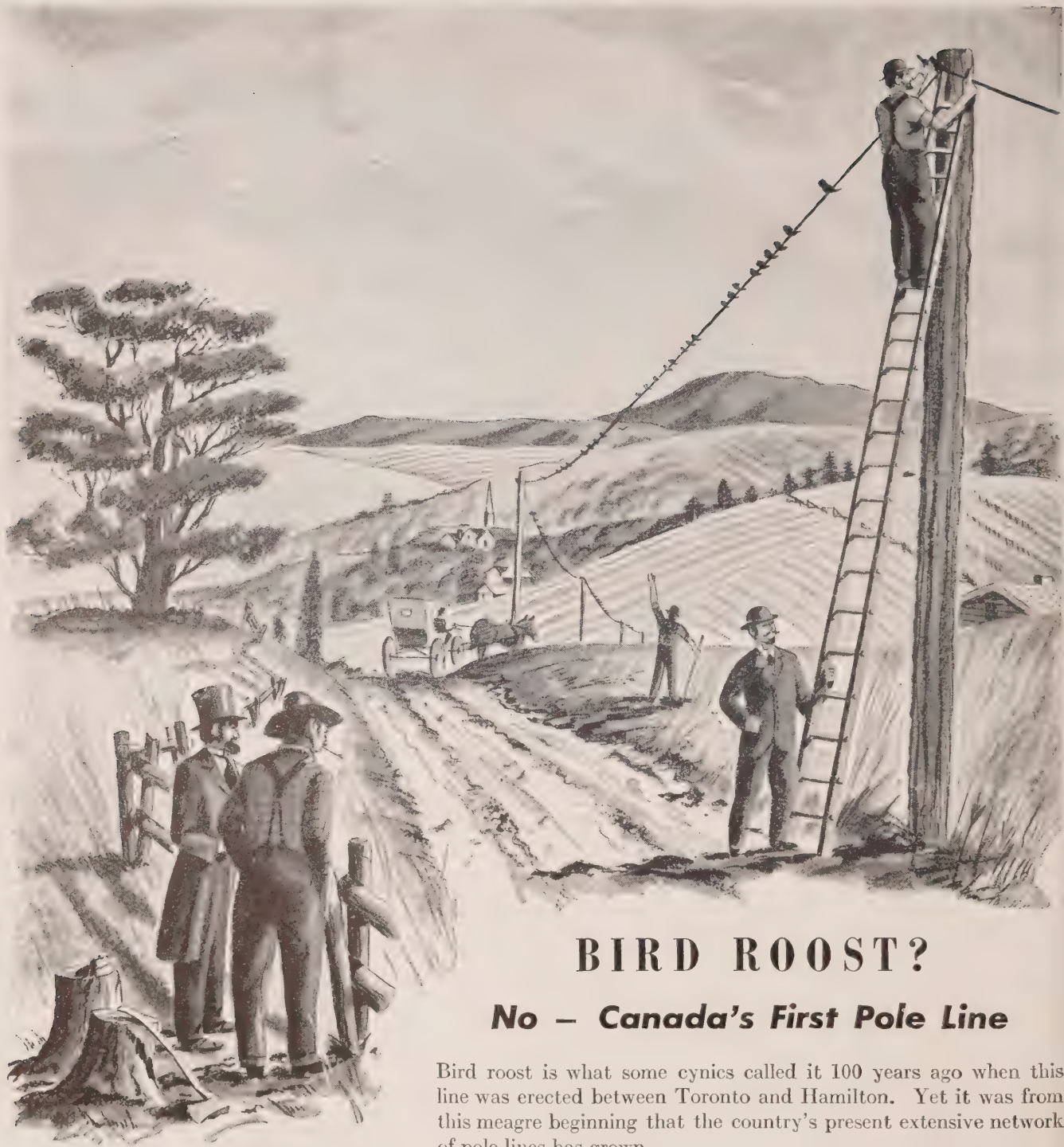
**THE
HYDRO-ELECTRIC
POWER COMMISSION
OF
ONTARIO**

HYDRO *News*



AGUASABON FALLS





BIRD ROOST?

No — Canada's First Pole Line

Bird roost is what some cynics called it 100 years ago when this line was erected between Toronto and Hamilton. Yet it was from this meagre beginning that the country's present extensive network of pole lines has grown.

Canada surely is a large country, but not too large for the vision of the men who, throughout the years, have designed, built and now direct its many telegraph, telephone and power systems. This tribute has been specially prepared to mark the first 100 years of pole line building in Canada and to pay homage to the memory of those early pioneers.





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(MEMBERS OF C.I.E.A.)

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THE FRONT COVER



IT'S a thrilling experience to see great logs tossed about like so many matches in a roaring, rushing water-fall, and to observe how the water is churned into a foaming fury as it sweeps over the rocks. These impressions were captured by the camera when J. H. Mackay of the Commission staff got this interesting shot at Aguasabon Falls for this month's front cover.

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November, 1946

Number 11

CONTENTS

	Page
DeCew Falls' Plant - - - - -	2
Page Three - - - - -	3
Down To Earth - - - - -	4
District No. 6 O.M.E.A. Meeting - - - - -	8
Electricity Spells Freedom - - - - -	11
Financial Forecasting (A.M.E.U.) - - - - -	12
Load Figures Show Industrial Growth - - - - -	14
Quarter Century Club Banquet - - - - -	15
District No. 4 O.M.E.A. Meeting - - - - -	18
Forty Years With The Commission - - - - -	20
Hydro Home Forum - - - - -	21
Down Through The Years - - - - -	22
When Day Is Done - - - - -	24
This And That - - - - -	27
Lighter Lines - - - - -	30
Hydro At Work In Industry - - - - -	31
Monthly Load Summary - - - - -	31
Municipal Loads - - - - -	32





Picture of the Month

LOOKING OVER the countryside from the interior of the new penstock that is being constructed at the DeCew plant, the photographer made this unusual picture.

"BEST-LAID SCHEMES . . ."

FROM its inception, Hydro has held one objective in view—the development of electrical services gauged to assist and promote, in the most effective manner possible, the general progress and prosperity of the province. In this development power supply is the dominating factor, and the Commission has always looked far ahead in order to make adequate provision for future contingencies.

Before the war, many major projects were planned, undertaken and completed on time schedules which permitted them to be closely fitted into the needs of the time. On the eve of the war, further projects were envisaged which, if they could have been embarked upon at that time, would have placed ample power resources at the disposal of the Commission to meet present requirements. Canada's war effort, however, called for a concentration of activity, not on future, but on immediate power demands. Moreover, the call of the services drained manpower from construction work and imposed severe restrictions upon the use of material. Negotiations, agreements, surveys—all the preliminaries associated with power developments of any magnitude—had to be left in abeyance for six years and, at the end of the war, proceeded with, often under quite different conditions to those prevailing when they were broken off.

As frankly admitted by its chairman, Dr. Thomas H. Hogg, the Commission would have welcomed a temporary falling-off in power demands with the cessation of hostilities. This would have enabled Hydro to carry out certain very necessary plant rehabilitation and improved the opportunity to catch up with the backlog of construction.

Almost everything has gone contrary to expectations. The increase in municipal and rural loads has more than offset the comparatively small decrease in power demand from the moribund munition industry. Instead of more labour and material being freed for construction work, there has been a serious shortage of both, and the Commission has been hard pressed to meet problems which have naturally arisen.

Four major developments, which will add more than 500,000 horsepower to the available power resources of the province are now under way, and considering the handicaps imposed by

inadequate equipment and lack of material, almost spectacular progress has been made. For much of this work, the Commission has been drawing upon its own providently accumulated reserves, and it has explored every possible source to provide the necessary material for new line construction. Original schedules have been badly disrupted, and unless the present picture changes considerably—and quickly—there is the possibility of a critical power shortage before the new developments can be brought into operation.

THE GOOD EARTH

THERE is something of compelling necessity in the call of the good earth which has drawn man to the soil from the beginning of recorded time. Cincinnatus hurrying back to his farm after his victories over the Aequians is symbolic of the important place agriculture held in the primitive civilizations, and much of the poetry of Virgil, written at a time when the eagle wings of Rome were spreading over the entire known world, has a significant bucolic background. Throughout our English literature we find the same evaluation of the soil as the source of national vigour and virility, and this is stressed by Shakespeare in his "Henry The Fifth," when, on the eve of Agincourt, he represents the King as confidently calling upon his good yeoman to "show the mettle of their pasture."

Ontario "yoemen" have shown the mettle of their pastures on many a battlefield and in many a peaceful pursuit, and once a year they gather to show it in a way that is more definitely applicable to their vocation. The International Ploughing Match, held this fall at Goderich in the presence of His Excellency, Viscount Alexander, Governor-General of Canada, sounded a rallying call to all farmers in the province and to many others outside its boundaries.

These ploughing matches, however, do something more than focus attention upon the highly-skilled and all-important work of the farmer. They are a reminder that a fruitful agriculture goes hand in hand with the contributions of industry and labour in maintaining a sound, well-balanced economy.

Because it occupies a very vital place in the industrial, commercial, rural and domestic life of Ontario, Hydro has a role which is fundamental in relation to the common weal.



By The Editor

It was well named—the Victory Match—for it was the first international ploughing match and farm machinery demonstration held since 1941.

There are other reasons, too, why Victory Match seemed to be so much in keeping with the event. For example, the venue was the Port Albert Airfield whose spacious hangars and far-flung runways have connotations which are still very vivid in the minds of Canadians. It was an occasion, too, which was symbolic, in that this setting, which had echoed to the reverberating roar of war machines, had become a mecca for those interested in the peaceful productive operations of the ploughshare.

A Gala Occasion

City folk, who had an opportunity of attending this first post-war international ploughing match, were quick to sense that it is a gala occasion in the lives of these people whose "down to earth" job

on the farms of Ontario is so vitally interwoven with the economic and social life of the province.

While the many classes of ploughing contests were pre-eminent at this event, which is sponsored by the Ontario Plowmen's Association, it was also an occasion on which the manufacturers of farm equipment and other products made rendezvous with rural customers and prospective customers.

Fine Creative Artistry

During the four days—October 15, 16, 17 and 18—approximately 130,000 people thronged across runways and into the four giant hangars to inspect the exhibits arranged by leading manufacturers. It would be a formidable undertaking to discuss these exhibits in detail. The overall impression, however, was one which will be long remembered. Most of the exhibits revealed fine creative artistry in design and construction with the result

that the various products and pieces of equipment were displayed in the most pleasing of settings.

Thousands See Hydro Exhibit

Hydro News had the interesting experience of seeing and meeting many of the thousands of people who crowded round the Commission's section where the Hydro farm exhibit was spotlighted in the centre. Made up of built-to-scale farm house, barn and other buildings and including all essential details such as built-to-scale pole lines, fences, trees, ploughed field and animals, the exhibit was designed to show how the outside wiring should be installed to provide satisfactory electric service. The fact that the buildings were illuminated added to the fascination which the exhibit held for the thousands of visitors who immediately stopped to examine it closely as soon as they saw

(Continued on page 29)



ON THE far-flung runways at the Port Albert Airfield it was like Labour Day at the Canadian National Exhibition. Crowds of farmers moved in and out among the various farm machinery exhibits (above) which were on display.

HERE ARE a few of the 215 contestants (top right) who took part in the many classes of tractor and horse-drawn plough competitions at the international ploughing match. They are shown as they presented their contest entry forms and sought information.



MANY QUESTIONS were asked by interested farmers as they inspected the new models of farm equipment on display in the giant hangars at the Port Albert Airfield. The farmer and his wife (right) appear to be more than interested in this particular piece of equipment.

WHEN HYDRO News arrived on the scene, these two muscular gentlemen were competing for the honours in the log-sawing contest, and they were, by no means, asleep on the job! The camera man got this shot when there was plenty of action and the sawdust was fairly flying as these contestants endeavoured to cut their way into the prize lists.



WHILE THOUSANDS of visitors to the international ploughing match were watching the contestants in action on the fields and inspecting the arresting exhibits in the various hangars and on the runways, hundreds were attracted to the interesting and entertaining side-attractions. For example, the muscular gentlemen (above) were engaged in a horseshoeing competition when the Hydro News' cameraman arrived.

IT WAS an interesting experience to meet the many farm women who accompanied their husbands to the international ploughing match and who made the most of their opportunity to inspect the many outstanding exhibits featured at this event. These pictures (left and below) were taken as some of these ladies were looking over the many exhibits displayed in the Hydro section. The inset shows J. A. Carroll, the secretary-manager of the match, who told Hydro News that 125 exhibitors had participated in this gala event, while there were 215 entrants in the various ploughing contests.



THESE AND hundreds of other farmers who attended the international ploughing match at Port Albert Airfield were keenly interested in the adequate wiring exhibit in the Hydro section.

DOWN TO EARTH



BOB TIMBERS (left) winner of the Hydro first prize of $\frac{1}{3}$ horsepower motor, in the tractor ploughing contest open to boys under 17, was in action in another contest with a horse-drawn plough when Hydro News got this shot.

THAT PLOUGHING does not take second place to any contest when it comes to the interest and skill of the contestants and the equally keen interest of the spectators is shown by this photograph (below).



WHEN THE Hydro News' cameraman visited the Commission's exhibit at the recent international ploughing match at Port Alberi Airfield, near Goderich, he had some difficulty in getting a good vantage point. Literally rising to the occasion, however, he secured this photographic impression (left) as visitors were inspecting the adequate wiring and other exhibits in the Hydro section.

ALL VISITORS to the Hydro display were immediately attracted to the built-to-scale model farm spotlighted in the centre of the area. The illustration (right) shows old and young alike gathered round this particular exhibit which featured miniature farm home, barn and other farm buildings which were illuminated. Even "to scale" pole lines, trees and fences were included.



DISCUSS MANY HYDRO PROBLEMS AT DISTRICT No. 6 GATHERING

Discussion and debate on many Hydro problems of the day, which have been complicated by prevailing general conditions, featured the meeting of District No. 6 of the Ontario Municipal Electric Association held in Kitchener on October 23, with the group chairman, George W. Gordon, presiding. Some inferences were made and criticism indulged in, which, according to replies made by W. Ross Strike, K.C., the H.E.P.C. commissioner present, were based on misunderstandings.

The delay in the presentation of the report on 60 cycle conversion came in for some adverse comment. Mr. Strike explained that the government, contrary to what had been suggested, was not responsible for this delay. If there was any blame in the matter, it must attach to the Commission, which, in the interests of all concerned, had had to make a careful study of all the details involved. He promised that in a very short time the report would be submitted. Nevertheless, a resolution was put requesting the immediate release of the report. This was

carried by a showing of nine hands to six—the great majority of the delegates refraining from voting.

The meeting also passed a resolution to the effect that the government be urged to do everything possible to help keep Hydro free from politics and political influences.

There was some discussion on the question as to whether, in view of the tremendous expansion of the H.E.P.C. in recent years, there should not be a larger administrative board. This matter of additional commissioners had already been brought up at the annual meeting of the O.M.E.A., and, as on that occasion, it appeared to be the consensus of opinion that a definite resolution would be inopportune.

Recommendations with regard to meter rental charges and the increase of secondary voltages received attention at the morning session, and the following resolutions were passed.

"That the O.M.E.A. District No. 6 recommend to The Hydro-Electric Power Commission of Ontario that all Hydro

municipalities discontinue the meter rental charge.

"That we recommend that the average secondary voltage be not standardized, but that it be increased about one volt a year."

Balloting conducted at the end of the meeting resulted in the re-election of George W. Gordon, Kitchener, as president of the District Association. Other officers are: past president, F. H. May, St. Marys; first vice-president, H. O. Hawke, Galt; secretary-treasurer, A. J. Thaler, Kitchener; directors: W. P. Kress, Waterloo; William Corp, Tavistock; F. E. Walker, St. Jacobs; D. E. Kennedy, Guelph, and A. E. MacIntyre, Stratford.

A conducted tour of Kitchener and Waterloo, during which Hydro street lighting was seen to advantage, led to the Grand Valley Golf Club where a memorable dinner awaited the delegates. The menu featured spareribs—and they were anything but "spare"—pigs' tails, roasted to a tender succulence, and sauerkraut whose piquancy attested the master chef. George W. Gordon, chairman of District No. 6, O.M.E.A., and William Henderson, chairman of the Waterloo Public Utilities Commission, were the joint chairmen at the banquet which was enjoyed by approximately 130 guests.



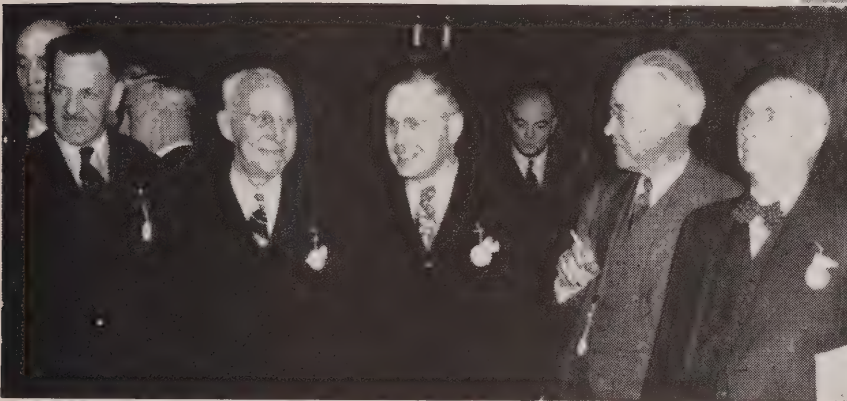
REGISTRATION TIME at the O.M.E.A. District No. 6 Convention at Kitchener. The two ladies attending to the heavy work are Mildred Kaufman and Mrs. A. Agajanian. Standing, left to right: are A. J. Thaler, secretary-treasurer, Kitchener; Ivan Shantz, Kitchener; R. M. Durnford, O.M.E.A. president, Sarnia; Ted Teckoe, Galt; D. N. Durward, Galt.



THIS GROUP before the eye of the camera includes Ivan Shantz, commissioner, Kitchener; William P. Kress, commissioner, Waterloo; C. R. Gies commissioner, Waterloo; William Henderson, chairman, Waterloo; Stuart E. Preston, manager, Kitchener; A. J. Cundick, commissioner, Kitchener.



ANOTHER GROUP of delegates in attendance at the District No. 6 meeting included: C. K. Merner, chairman, New Hamburg; William Herod, Canada Wire Company, Hamilton; Wilbert Gleiser, commissioner, Waterloo; Stuart E. Preston, manager, Kitchener.



ANIMATED CONVERSATION before lunch at the O.M.E.A. District No. 6 convention at Kitchener. Included in this group are Guy Parker, H.E.P.C.; A. E. MacIntyre, Stratford; William Kress, Waterloo; A. J. Thaler, Kitchener; Cliff Kinzel, Kitchener; H. O. Hawke, Galt; G. W. Gordon, president, Kitchener.



TWO DELEGATES from Waterloo get a chance to talk things over between business sessions: left, Wilbur Gleiser, commissioner, and Eby Rush, superintendent.



DURING A lull in conversation the Hydro News' photographer sighted this quartette of O.M.E.A. representatives. They are, from left to right: Roy Pierson, Brantford township; O. J. Little, commissioner, Preston; W. E. Swartz, manager, Preston; Fred O. Pelz, chairman, Preston.



JOE WEILER, Baden, (right) had two interested listeners during an intermission in the District No. 6 O.M.E.A. sessions at Kitchener, William Bishop, superintendent, Guelph, and Ray Pfaff, manager and secretary, St. Marys.

HYDRO METERMAN HAS TROUBLES— SOMETIMES ONLY FIDO IS HOME

Since low-cost Hydro services contribute so materially to the conveniences and comforts of home life, the idealist might be led to imagine that a high priority would be given to the monthly visit of the meterman. Alas and alack, this is by no means invariably the case. Instead of being greeted at the door by the beaming housewife—or, at more pretentious premises, by the comely maid, the yapping of Fido, or the contemptuous stare of the family cat, may be the only welcome accorded him. The owner or tenant is away at work. The good wife is off shopping. The children are away at school. And the place is locked up. Next day, if at considerable inconvenience to his allotted routine, the meterman repeats the call, the barking of the dog may be a little less menacing and the cat may condescend to rub its back against the friendly Hydro trousers. Otherwise, the situation is unchanged. The meter must be read in order that the correct bill may be sent out. What is to be done about it?

Methods Are Discussed

Methods adopted by Hydro municipal commissions in solving this type of problem were revealed when members of the Western Ontario division of the Accounting and Administration branch of the Association of Municipal Electrical Utilities met recently for their Fall conference in London.

From the discussion it appeared that

informal practices based on too optimistic a concept of human nature had first been experimented with in approaching the problem of "closed premises" and the absentee consumer. A note would be left by the Hydro man, stating he had called—or perhaps he might rely on the absentee's neighbour passing on an oral message—requesting the consumer to inform the local Hydro office when it would be convenient for him to be "at home" to a meter reader. As these well-meant "billets doux" were generally disregarded, a more business-like etiquette was soon adopted. A card system was introduced so that the consumer could do his own meter reading and record it on the card which was stamped for mailing. This system, as reported upon, has been successful in some municipalities and not in others.

Estimate Accounts Monthly

In Guelph, according to Joseph Gow, the card system had been tried out for twenty-five years. The consumers in residential districts had co-operated but others had not. This year the system had been changed. Where access could not be arranged for the metermen, accounts were estimated once a month.

On the other hand, quite a brilliant success was reported to have attended the card system in Windsor. During the war, when many consumers were away from home when the metermen called, the municipality had used in the neighbour-

hood of 1800 cards a month, with excellent results. To prevent a post-war return to less exemplary habits on the part of absentee consumers, a little stimulus, J. F. Cooke of the Border City intimated, had been given to encourage card returns. The first time a Hydro consumer failed to return a card, his bill was estimated on the last month's consumption. If the next time the card was left he still showed no interest, the estimate was a little higher, and by somewhat increasing the estimate of consumption with each succeeding negligence, the consumer was impelled to make a contact with the Hydro office. Conversations ensued with advantageous results for all parties, and the co-operation of the blushing delinquent was assured for the future. In Windsor, it was claimed, 90 percent of the cards distributed monthly during the past two years have been filled in and promptly returned.

Leave Keys With Hydro

In Kitchener there is no card system, but the Hydro commission there has devised a method of procedure uniquely its own. It has encouraged consumers who are frequently away from home when the meterman calls to leave a key to their premises at the Hydro office. These keys are guarded as closely as the Crown Jewels and carefully checked off with each meterman as he sets out on his "beat". The Hydro meter reader may on occasion look a bit like Simon the Cellarer as he goes about his job with a bunch of basement keys jangling from his belt. But according to R. H. Becker it is the best system yet devised. Every meter is duly read and there are no call-backs to make.



WHEN THE supervising field personnel of the Commission's operating department were in Toronto for a meeting recently, the Hydro News' photographer flashed this picture. Included in the group are: A. W. Manby, O. S. Luny, H. J. Muehleman, John Dibblee, Gordon Pace, A. S. Robertson, Tom Berry, W. B. Bowyer, J. S. Lotimer, Walter Looney, G. L. Rous, J. W. Stiles, L. H. Baxter, H. R. Graham, D. A. McKenzie, R. H. Hillery, H. W. Nablo, G. B. Sharpe, William Dowds, L. G. Dandeno, F. C. Lawson, J. M. Hambley, A. H. Skene, W. M. Grundy, P. C. Young and T. H. Gibbon.

ELECTRICITY SPELLS FREEDOM FOR WOMEN OF GREAT BRITAIN

On Visit To Commission, Miss Vera Norvick, Assistant Secretary Of The Electrical Association Of Women, Tells Of Important Role Which Association Is Playing In Lives of British Housewives

A representative of what must be one of the most enterprising electrical groups on either side of the water, the Electrical Association of Women in London, England, was a recent visitor to The Hydro-Electric Power Commission of Ontario. She is Miss Vera Norvick, assistant secretary to the association. During the past summer, she spent several months on this continent and on her way through Toronto, she stopped off to see what was going on in the electrical business here. Hydro News was fortunate enough to spend the day with Miss Norvick as she was being shown Niagara Falls, the Queenston plant and the construction work which is proceeding at DeCew and was able to learn something of her organization.

The Electrical Association of Women celebrated its 21st birthday at the beginning of last year. Launched originally by members of the Women's Engineering Society, it has become a thriving organization of its own with some 10,000 members and 80 branches throughout Great Britain. It is headed by Miss Caroline Haslett C.B.E. and is sponsored by the electrical industry in Great Britain.

Deep Social Significance

Basically, this association has an aim of deep social significance. It feels that women cannot take their place in a democratic society as long as they are chained to a heavy manual routine of housework. They believe that the general use of electricity can be one of the most efficient ways of giving women the necessary freedom and also of raising the general living standard in England.

Scholarships Established

The E.A.W. aims to educate English women in the use of all electrical appliances in the home. It also wants to give an introduction of electrical knowledge to girls who are interested in finding jobs in the electrical field. With this in mind, the E.A.W. as far back as 1932 instituted its certificate and diploma in Electrical Housecraft for demonstrators and saleswomen and for teachers. To meet the present needs, accelerated by women's important place in war work, a series of scholarships have been set up, sponsored by the leading organizations of the electrical industry, for college girls, for the

purpose of promoting the further "education and training of women in the uses and application of electricity in all its applications for domestic purposes." Of immediate interest is a travelling scholarship which is now being planned and which will enable the recipient to study conditions in a country outside England.

Another interesting aspect of the E.A.W.'s plans is to act as liaison between the manufacturer of electrical appliances and the consumer. They feel that it is more important than ever that women should have a voice in the designs and uses of the appliances of which they will have the exclusive use.

Co-operated With Ministries

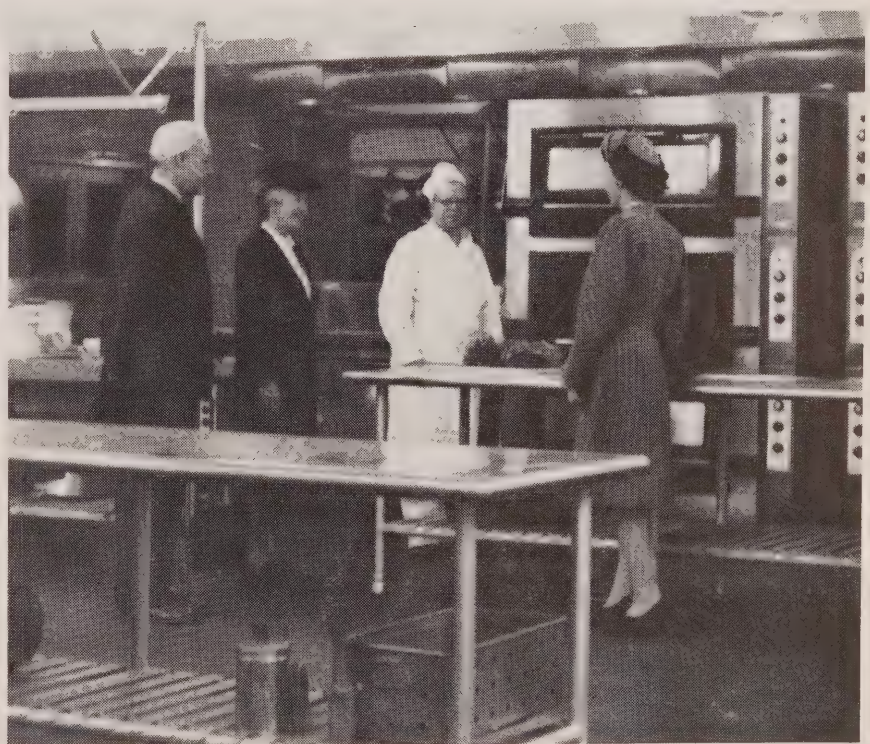
During the war the E.A.W., in spite of its badly depleted staff and its very strategic position in the path of a lot of the bombing, managed to carry on. They co-operated with the different ministries when asked, for example, doing certain food testing for the Ministry of Food.

Now, with the war over, they are look-

ing forward to a more far-reaching programme than ever. Miss Norvick, admiring the Hydro system and the electric home of Ontario, says that there is a tremendous interest in electrical equipment of all sorts being shown by English housewives. Surveys have shown that an increased number of English women want electricity in their postwar homes for cooking, washing and other tasks. The E.A.W. feels that they can do a big job by trying to get electricity into the homes that are being built now in England's big housing programme.

Very Busy

Miss Norvick, herself, is the very busy assistant secretary of the association. This title means, she says, that since she joined it nineteen years ago she has done a little of everything including clerical work, managing the finances, selling space for advertising, managing the circulation and writing for their publication "The Electrical Age." At one time a member of the D'Oyly Carte Company, Miss Norvick left the stage to enter the home service department in a London electrical company, and from there joined the E.A.W. shortly after it was organized.



MISS VERA Norvick of the Electrical Association of Women, London, England, was a recent visitor to the H.E.P.C. She is seen here (centre) having a look at the kitchen of Sunnybrook Hospital with J. A. Blay, the Commission's assistant director of promotion, and Edithemmu Muir, Hydro's home economist.

BOTH CONSTANT AND VARIABLE FACTORS INVOLVED IN FINANCIAL FORECASTING

**"Hydro Budgeting" Is Subject Discussed By John V. Walters,
Commission Treasurer, When Addressing A.M.E.U.
Group At London Meeting**

Planning the course of Hydro financing is somewhat like the charting of an aeroplane flight, inasmuch as the various assisting and retarding factors must be forecast in advance. In estimating, there are trends whose constancy can be as fairly relied upon as that of the trade winds which sweep the ocean, and there are other trends much less predictable.

This was gathered from an illuminating address on "Hydro Budgeting," delivered by the Commission's treasurer, John V. Walters at London on October 16, when a record attendance of 137 registered at the Hotel London for the Fall conference of the Western Ontario Division of the Accounting and Office Administration Branch of the Association of Municipal Electrical Utilities.

Purpose Of Budgeting

Budgeting, such as The Hydro-Electric Power Commission of Ontario and its associated municipal commissions and public utilities were concerned with, Mr. Walters pointed out, had four objectives—first, to foretell the trend and scope of financing; second, to provide information on the anticipated trend of revenues and expenditures; third, to reflect the progress of capital expenditures in relation to the original timing of those expenditures; fourth, to ensure control of the trend of overhead expenses.

As far as the parent Commission, itself, was concerned, there were, Mr. Walters explained, three budgets. These were the Operating Budget, the Capital Budget and the Cash Budget. The last was a composite of the first two.

Operating Budget

The operating budget was referred to as the simplest of all financial forecasts. Revenues were prepared from the estimates of a "load committee," and operating expenditures represented a consolidation of the estimates made for each division of the Hydro system, including the Northern Ontario Properties. Revenue estimates might be upset by a sudden diminution in load or the acquisition of new load not foreseen when the budget was drawn up, and operating expense estimates might be affected by industrial disputes, involving labour and material shortages, and occasionally by storms. On

the whole, however, the operating budget could be fairly closely figured as was manifest, Mr. Walters stated, from the fact that, since its introduction in its present form, there had been an error of less than $1\frac{1}{2}$ per cent in operating revenue forecasts and an error of less than $\frac{1}{2}$ of 1 per cent in the estimates for operating expenditures.

Capital Budget

Emphasized by the speaker as one of the characteristics of the capital budget was its extreme sensibility to disturbing factors—such as labour and material shortages and rising or falling costs. This made forecast of expenditures difficult since conditions and circumstances often intervened to delay or impede projects for which estimates had to be made well in advance.

Outlining procedure in the preparation of this budget, Mr. Walters stated that the Commission's engineers were asked to make detailed estimates with regard to the capital expenditures likely to be made during the year. These were divided into projects for which authorization had been already secured, and into other classifications according to various degrees of urgency. The estimates for each project were broken down into estimates for individual work orders for each project, and at the end of each budget year a carry-over figure was shown for unexpended amounts.

While ensuring accuracy in the estimation of capital expenditures for an organization like Hydro was fraught with difficulties, Mr. Walters indicated that a satisfactory approximation of aggregate estimates to actual expenditures can be achieved if conditions are not too disturbed. It had been necessary for the Commission to make plans to push ahead with the development and construction which had had to be deferred during the war. During recent months, this activity, so urgently called for by the increasing demands for power, had been hampered at almost every turn by shortages of material. He hoped that more stable conditions with regard to material production had now been restored and that they would continue to prevail.

The cash budget, Mr. Walters went on to explain, required the shifting of the

Commission's revenues and expenditures from an accrual to a cash basis. Most of the revenue from power became "cash" in the following month. Some of the expenditures of the Commission involved merely "book" transfers. Other accounts were payable at quarterly or annual intervals. Purchases of power and other expenditures became disbursements on the month following the accrual of the liability, and so on. Allowance had also to be made in the cash budget for maturing investments, and for investment and re-investment of reserves. These represented substantial sums. The results portrayed by the cash budget were checked each month against the general bank balance shown in the Commission's books.

"Because of the closeness with which we follow our actual cash expenditures against estimates," Mr. Walters told his audience, "we have been able to plan our financing with some confidence."

The Commission's treasurer related how cash forecasts over a recent period involving substantial borrowing had worked out to as close an approximation as \$1,000.

"That, however," he admitted, with a smile, "is to be regarded as fortuitous. On a gross revenue which, in 1945, aggregated over \$60,000,000 we are quite content to estimate each month's cash position to within \$100,000 or \$200,000."

Question Period

Following Mr. Walters' address, the customary question period was introduced, during which Ray Pfaff of St. Marys Public Utilities Commission occupied the chair.

In answer to a question as to whether the 13th power bill could be sent out by the Commission to the municipalities in time for their January budgeting, Mr. Walters explained that this was impossible since the final accounts took longer to make up and could not be despatched until a final audit was made. A suggestion that a statement of credits or debits on the purchase of power by municipal commissions should be presented every five years instead of annually through a thirteenth bill was freely discussed but failed to receive general approval.

Questions were asked as to the advisability of introducing a more simplified system of accounting control for municipal commissions than that provided by the present accounting manual. It was the consensus of opinion that, while controls might be adjusted to suit local

(Continued on page 20)



PREPARED TO tackle either "double entry" or "double entrée," these delegates from "Greater" Toronto (left) are (left to right) M. A. Gough, East York Hydro-Electric Commission, and E. S. McNeice, R. V. Thorne, H. B. Corey and J. D. Reid—all from Port Credit Hydro-Electric System.

THE ADJURATION to housewives "Feed the brute" is stressed in this study (right) of contrasts. Note the cheerful air of the men who have already been served and the doleful mien of those still awaiting lunch.



HEAD TABLE (below)
(left to right)

J. W. Peart, St. Thomas;
E. J. Pattison, Windsor;
Roy S. King, Midland;
J. R. Sullivan, Woodstock;
A. B. Manson, Stratford;
W. Ross Strike, K.C.;
W. E. Wallace, Windsor;
R. W. D. Lewis, London;
J. V. Walters, Toronto;
Ray Pfaff, St. Marys;
C. A. Veigel, Paris;
W. Roy Harmer, Toronto.

BREAKING ALL previous attendance records, 137 delegates assembled for the Fall Conference of the Western Ontario Division of the Accounting and Office Administration Branch of A.M.E.U.



LOAD FIGURES SHOW INDUSTRIAL GROWTH

Addressing Electro-Chemical Society, Dr. Thomas H. Hogg Discusses Hydro's Problems In Meeting Increasing Demands For Power

Some idea of the expansion of the electro-chemical and electro-metallurgical industries of Ontario during recent years was given by Dr. Thomas H. Hogg, chairman of The Hydro-Electric Power Commission of Ontario, when addressing a luncheon meeting of the Electro-Chemical Society Incorporated in Toronto on October 18.

Cites Load Figures

Citing figures for special power loads supplied to plants in the Niagara district alone, he stated that this type of industry in 1936 consumed about 235,000 horsepower and that last year this load approximated 522,000 horsepower, an increase of 122 per cent. The total energy supplied to these industrial loads was stated to be about 1.1 billion kilowatt-hours in 1936, and it had increased to 2.3 billion kilowatt-hours in 1945, representing an increase of 109 per cent.

The total energy production of the Commission from all sources of generation during the fiscal year 1945, Dr. Hogg stated, was close to 12½ billion kilowatt-hours—an all-time high—of which nearly 9 billion kilowatt-hours were used in Ontario by the Southern Ontario system. The energy supplied to the electro-chemical and electro-metallurgical industries was, therefore, about 25 per cent of the total energy used in Ontario by the Southern Ontario system, he pointed out.

Kept Pace With Demands

Outlining Hydro's position today as compared with 1939, when war broke out, the Commission chairman said that during the war Hydro was called upon to meet a 47 per cent increase in primary peak load and a 70 per cent increase in primary energy demand. As the war progressed, he continued, the Commission had managed to augment its power supplies to keep pace with demands, trying always to hold new construction to a minimum in conformity with the national policy of husbanding the limited supplies of men and materials.

During the last year of the war, Dr. Hogg said, the Commission's whole system was loaded to the limits of its capacity. It had been hoped that, following victory, there would have been a recession in load, which would have made it possible to rehabilitate hard-worked equip-

ment. It was true that some war load had dropped but the loss was more than offset by an increase in the demand of municipal load, largely for domestic purposes, so that all through the winter of 1945-46 and up until the time that the industrial disputes had begun to affect production, the primary peak load of the Southern Ontario system had continued to exceed the corresponding load for the previous year.

Heavy Backlog Of Work

"Today," Dr. Hogg continued, "the Commission should have at least 200,000 horsepower surplus of reserve capacity. The fact that the surplus does not exist makes the provision of additional power supplies a pressing and difficult problem."

He pointed out that the Commission's post-war programme included not only new generating stations but many new transmission lines and primary and secondary substations. In addition, there was the large backlog of heavy maintenance that it was essential to proceed with at the earliest possible date to put existing equipment in first class operating condition.

(The schedules of this programme, as previously reported in Hydro News, have been retarded by shortages in equipment and materials and by other adverse conditions.)

The Basic Product

In concluding his remarks, Dr. Hogg said: "Hydro-electric power is the basic product upon which all industry in this province has in the past, and will in the future, depend. We hope to see a steady growth in the electro-chemical and electro-metallurgical industries, to which, with regard to electrical services, ample supplies and low cost are such large factors in their success."

Lightning Causes Greatest Trouble

Effects Now Being Successfully Controlled, Says C. F. Publow In R.C.I. Presidential Address

"White coal has become more and more a necessity to our complex way of life," stated C. F. Publow, B.A.Sc., this year's president of the Royal Canadian Institute and assistant engineer with The

Hydro-Electric Power Commission of Ontario, in his inaugural address at Convocation Hall on Saturday, November 2.

"If it halts," he went on, "we are in difficulty, and if it fails, conditions rapidly become embarrassing for those responsible for the service."

He described how this most essential commodity is generated in Ontario in Hydro-Electric plants and then transmitted over hundreds of miles of open country before reaching the ultimate consumers. "These arteries of power, so precious to our everyday life," he continued, "must be safeguarded from the hazards which may be lurking in hide-outs all along the way. And the chief trouble-maker is lightning."

Beneficial Effect

Mr. Publow described the various kinds of lightning, and the work that the scientists and engineers have done in



C. F. PUBLLOW

order to counteract it. He said that through field and laboratory investigation "the art" had been so successful in controlling the effects of lightning that interruptions and failures due to this cause were now very rare and the public had little cause to worry about lack of continuity in their service. He also went on to say that lightning was not merely a glorified firework display which occasionally killed and caused damage; by a process similar to that used in nitrogen-fixation factories, it manufactured nitrogen compounds from the air which were deposited on the earth with the rain. The greenness of the country after a heavy thunderstorm, he said, was an indication of this beneficial effect.

REMINISCENCES, GOOD FELLOWSHIP

MARK QUARTER CENTURY CLUB EVENT

Deep in the hearts of those men and women who have earned the right to receive the certificate and wear the gold button which are emblematic of membership of the Ontario Hydro Quarter Century Club is that sense of pride in the contribution they have made, individually and collectively, to the building up of Hydro to its present pre-eminent position in the economic, domestic and social life of Ontario.

It is not a pride which finds blatant, verbal expression; rather it is manifested by a sparkle in the eye, a ready smile or in that Peter Pan spirit which was again in evidence at the club's annual banquet held this year on October 18 in the King Edward Hotel, Toronto.

Each passing year brings new additions to the ranks of these faithful Hydro employees and also the passing of many former colleagues. This year, 107 employees, nine of whom are ladies, received the coveted certificates and buttons, while solemn, silent tribute was paid to the memory of fifteen members who have passed away since the last annual banquet. The total membership of the club now stands at 836, representing a combined record of more than 22,000 years of service to Hydro.

As in former years, it was an evening of good fellowship and reminiscences—an occasion when these Hydro folk blend

their voices in old, familiar refrains.

"Let Me Call You Sweetheart," sang the head table in tribute to the ladies who replied with a soft rendition of "For They Are Jolly Good Fellows."

Then there was Harry H. Leeming who put considerable feeling into a very fine vocal offering of "If You Were The Only Girl," as he faced the microphone with one of the talented and charming artists of the evening. What R. L. Hearn may have lacked in timbre, he made up in good sportsmanship when he was hustled to the mike to "Roll Out The Barrel." Possibly, the pièce de résistance provided by Hydro vocalists was R. H. Ree's rousing interpretation of the ever-popular "Alouette."

Speeches made during the evening were brief and lively, and J. H. Caster, president of the club, said as he welcomed new members, that he was very glad they were coming in so they could take over and relieve some of the older fellows. Tribute was paid to Ernest (Bobby) Awde of the H.E.P.C. property department for his fine work in designing the certificates, and H. P. Fierheller of the printing department also came in for favourable mention for his work on the printing of the attractive programmes.

One of the highlights of the evening was the presentation of a cheque to Albert H. McBride, cost accounting engi-

neer, who had completed forty years' service with the Commission. The presentation to Mr. McBride, who is the only remaining member of the original staff, was made by W. Ross Strike, K.C., H.E.P.C. commissioner, and when Mr. McBride took over the mike, he recalled some of Hydro's early history and some amusing anecdotes.

There was one solemn note in the proceedings, however, when the gathering paid reverent tribute to the following fifteen members who had passed away since the last meeting: H. T. J. Cox, Port Hope; Dr. R. E. Gaby, Toronto; H. R. Keller, Madoc; S. M. Richardson, Toronto; D. E. Scott, Windsor; W. J. Terry, Elmvale; A. R. Beveridge, Toronto; A. S. L. Barnes, Toronto; G. G. Terry, London; J. M. Harkins, Toronto; A. C. Goodwin, Toronto; E. P. Brown, Toronto; B. Hill, Kitchener; H. J. Flynn, Toronto; and John Cullen, Niagara Falls.

Officers elected for the ensuing year are: Thomas McFadyen, president; S. W. B. Black, vice-president; S. L. Eisenhofer, secretary; and G. D. Cumming, treasurer.

This year over 490 attended the banquet, and following the draw for lucky number prizes, the event was climaxed by a floor show and a movie on Hydro construction work at Stewartville.



THIS SMILING group from left to right are: A. H. Frampton, Tom Mollison, A. W. "Bud" Manby, R. G. Matthews, all of Toronto; and W. J. Meanley, Niagara Falls.



GOOD FELLOWSHIP was the keynote of the evening and among this happy group are F. W. Clark, G. G. Cousins, W. C. Dymond and G. H. Taylor.



A BRIGHT feature of the banquet was the presence of the ladies. At this table, left to right, are Etta E. Johnson, Tessa MacPherson, Fern Walker, S. E. Hartwick, E. K. Toole, Annie McKane, Jean Wilson, Edith Anderson and E. G. McNichol.



C. J. VICK receives his certificate, gold button and congratulations from W. Ross Strike, K.C.



ANOTHER TABLE of ladies, reading from left to right: Keitha Woodley, Alberta McCallister, Mildred Holtby, Vivian Williamson, Mabel Evans, Grace Coughlin, Marjory Graydon and Maud Schroder. The two gentlemen at this table are H. V. Armstrong and J. P. Morgan.



SOME OF the members identified in this cross-section of the gathering are Dr. Otto Holden, K. T. Jeffery, Fred A. Robertson, A. E. Nourse, C. E. F. Murphy and William Dowds, superintendent of the Patricia district. Left is Dominico Filippone of Niagara Falls.



A GROUP of interested onlookers "snapped" during the entertainment programme include: W. E. Choate, D. Croskery, George Shierlaw and A. W. Murdock.



ANOTHER SECTION of the crowd included W. McKenzie, C. B. Stephens, Ernest Awde, J. J. Jeffery, R. M. Thompson and J. S. Lotimer.



THIS GROUP (above) from left to right are: J. J. Eyles, N. D. Ellis, C. C. Wilson, S. R. Belfry and Andrew Beardsall.

SOME OF the boys (bottom right) identified in this section are: R. G. King, N. M. Gallagher, T. F. Lonergan, J. H. McTavish and E. A. Farrow.



JIM SCOTT, left, and R. L. Hearn, chief engineer, design and construction, do their "bit" towards the evening's entertainment.



GUESTS AT the head table in the act of serenading the ladies. They are, left to right: J. V. Walters, M. J. McHenry, A. H. Hull, J. H. Caster, W. Ross Strike, K.C., S. L. Eisenhofer, G. D. Cumming, S. W. B. Black, Osborne Mitchell and R. L. Hearn.



MEANING OF ADEQUATE WIRING STRESSED AT O.M.E.A. MEETING

Adequate wiring, and the province-wide educational programme which has been inaugurated by the newly-formed Electric Service League of Ontario to make known its advantages, were discussed by M. J. McHenry, director of promotion for The Hydro-Electric Power Commission of Ontario, in a brief address delivered at a meeting of District No. 4 of the Ontario Municipal Electric Association in Mimico on October 30.

Sufficient Number Of Outlets

Questions were asked as to the difference between "adequate wiring" and the wiring required to meet inspection. In explanation, Mr. McHenry pointed out that adequate wiring meant making provision for the load a householder would use to operate all the electrical appliances and equipment now generally considered as necessary in the modern home. In ad-

dition, adequate wiring entailed making provision for a sufficient number of outlets for the use of appliances with the maximum convenience. To conform to provincial inspection and the Canadian Electrical Code, however, Mr. McHenry explained, the actual wire had to be of a specified quality and installed in accordance with an approved standard of workmanship. As an example, when a builder let a wiring contract, the job was usually done on as economical a basis as possible. Inspection was satisfied by conforming to the regulations regarding gauge, insulation and conductors for the particular service required, and frequently a minimum number of outlets was provided.

Detailed Plans Later

The plans of the Electric Service League, Mr. McHenry announced, would be duly presented to the municipalities

in fuller detail, in letters and pamphlets and the whole wiring situation would be reviewed and discussed.

Democratic Privilege

At a dinner following the meeting, W. Ross Strike, K.C., O.M.E.A. representative on the Hydro Commission, sounded a serious note when he deprecated the apathy shown by some electors to their duty as citizens in neglecting to register their votes. He suggested that it would be a good idea for candidates seeking civic office to embody a "get-out-to-vote" plank in their platforms. The right of unobstructed voting was a democratic privilege. It was only by exercising this right that we could assure ourselves of the kind of government we wanted.

Mr. Strike paid tribute to James Wickiam, superintendent of the East York Hydro-Electric Commission, who had decided that the best way to spend his birthday was by attending the O.M.E.A. regional meeting.



WHEN DISTRICT No. 4 O.M.E.A. delegates arrived at the Sagamore Hotel, Mimico, they assembled in a room which commanded an arresting view of Burlough Falls. When the Hydro News' cameraman got this picture, M. J. McHenry (centre) the Commission's director of promotion, was discussing the beauty of the setting with Jim Wickiam (extreme left), superintendent of the East York Township Hydro-Electric System, and W. G. Amos and E. J. MacArath. It should be mentioned that they were looking at a large mural of the Burlough Falls which are located north of Peterborough.



"YOU PAYS your dollar and you takes your choice" was the comment of M. A. Gough, Secretary of the East York Township Hydro-Electric Commission, as he took in the money at District No. 4 O.M.E.A. meeting. In the line-up are: mayor A. D. Norris of Mimico; Robert Dunn, commissioner from New Toronto; reeve George H. Mitchell of North York Township, and H. R. McClymont, manager of York Township Hydro-Electric System.



HYDRO NEWS interrupted this tête-à-tête between sessions at the District No. 4 gathering to record this picture. From left to right they are: Cy Johnston; A. G. Jennings, chairman of the East York Township Hydro-Electric Commission; Bill Wheeler; Rod S. Brown, Northern executive officer of the O.M.E.A., and John Irwin who is president of the zone and also chairman of Brampton's Hydro-Electric Commission.



GOING OVER the programme for District No. 4, O.M.E.A. meeting, M. J. McHenry, director of Promotion for The Hydro-Electric Power Commission of Ontario, discusses an item on the agenda with Loftus H. Reid, chairman of the Toronto Electric Commissioners, while Bert Merson, the vice-chairman of the same organization, looks on with interest.



"I DO like a cup of tea and a cigar in the middle of the afternoon," remarked John D. Reid, member of the committee of council for Port Credit, when Hydro News "flashed" this picture. With him, and very much in agreement, is R. E. Law, commissioner of East York Township Hydro-Electric Commission.

HAS LONGEST SERVICE RECORD OF ANY COMMISSION EMPLOYEE

Honour A. H. McBride Upon Completion Of 40 Years With Hydro—Reminiscences Of Early Days Are Recalled

It was a well-guarded, top-drawer secret!

Only a few knew what would happen when Albert H. McBride stepped up to the head table at the recent annual dinner of the Ontario Hydro-Electric Quarter Century Club in the King Edward Hotel.

When his name re-echoed over the public address system in the crowded Crystal Ball-Room, he was seated at one of the round tables enjoying that satisfaction which only a pipe smoker can appreciate after a good meal. For a moment, he looked around questioningly and then, removing the pipe from his lips, he made his way slowly through the crowd of cheering club members and up to the head table.

Noteworthy Service Record

As Mr. McBride stood between commissioner W. Ross Strike, K.C., and Quarter Century Club president J. H. Caster, he heard why he had been called. The Commission had not forgotten the man who had just completed 40 years'

service last October 6—a man who had earned the distinction of having the longest record of service of any employee now identified with Hydro.

They remembered the outstanding contribution which this slim, and still very youthful-looking engineer had made to the building up of one of the greatest public ownership enterprises in the world. The envelope, which changed hands as Mr. Strike congratulated this still-active Hydro pioneer, indicated that the remembrance had taken a tangible as well as a verbal form. Then he heard his colleague, president Caster remark: "The thing I like about Mac particularly is that he is so awfully nice."

Early Days Of Hydro

As he stepped up to the mike and looked over the cheering gathering in front of him, his eyes twinkled reminiscently through his glasses, and there was just the suggestion of a stoop to his shoulders as he—at first haltingly—expressed his appreciation to the Commission and his colleagues for their tributes. Then, grasping the table with both hands, he carried his audience back to the very early days of Hydro in Ontario—to the year 1906 when there were but seven

Commission employees.

"Forty years," he smiled, "is a long time—not so long to look back on, but a long time to look forward to."

In these early days, he recalled, there were two commissions—a commission of enquiry headed by Sir Adam Beck, George Pattinson and P. W. Ellis, and a commission of construction headed by Sir Adam Beck, Hon. John S. Hendrie and W. K. McNaught. At that time, continued the speaker, there were two chief engineers—one for each commission—four engineers and one stenographer, while the office consisted of three rooms in a building at the corner of Adelaide and Toronto streets.

Staff Of 80 In 1912

Pausing for a minute as his mind travelled back over the years, Mr. McBride next told his audience how in 1912 the staff had increased to 80 and the load at that time was 21,000 horsepower. "Today," he said, "we have a staff of over 8,000 and the load is over 2,000,000 horsepower."

As he concluded his reminiscing, which seemed all too brief, applause again re-echoed throughout the great ball-room.

Nodding in turn to his audience, Mr. Strike and Mr. Caster, Mr. McBride slowly made his way back to his chair. He sat down and reached for his pipe.

FINANCIAL FORECASTING

(Continued from page 12)

needs, the manual was still a reliable guide for sound practice.

Emphasizes "Spiritual Values"

At the luncheon preceding the afternoon session of the conference, W. E. Wallace of Windsor presided and called upon A. B. Manson of Stratford to introduce the guest speaker, W. Ross Strike, K. C.

Mr. Strike's first remarks were addressed to the delegates from the broad basis of Canadian citizenship. He deprecated the spirit of frustration which seemed to him too prevalent and emphasized the recognition of spiritual values as necessary in building that strength of character required to meet and solve the problems of our times. Speaking, then, as a commissioner of The Hydro-Electric Power Commission of Ontario, he drew attention to the programmes of development and expansion to which the Commission was pledged in the interests of the people of Ontario and confidently appealed to all those associated with Hydro to give their best in effort and initiative during a period of renewed expansion.

"If our methods," declared Mr. Strike, "correspond with our expanding business, then, undoubtedly, Hydro will continue to be one of the greatest enterprises in the world."



AFTER FORTY years of continuous service with the Commission, and still going strong, Albert H. McBride (left) was the recipient of a presentation made by W. Ross Strike, K.C., H.E.P.C. commissioner, at the Ontario Hydro Quarter Century Club banquet.



Hydro HOME FORUM by Edithemmu Muir

HOME ECONOMIST

No season offers richer stores of material for arrangements than autumn. Club dinner parties are made particularly attractive by the use of fall vegetables as decorations as well as by tasty food.

* * *

Here are some of the prettiest food sights that we've seen:

At the Wren's Club dinner the table decorations were long, yellow marrows cut in half, scooped out and filled with pears, grapes and apples. To carry out the ship's motif, red Lifesavers were skewered to the sides like portholes and the red sails were cut from heavy art paper. In the candlelight those cargoes seemed a-sailing.

At the Business Girls' Club dinner, a garden lover had charge of table decorations. Her choice was small pumpkins halved, filled with earth and planted to late blooming marigolds. The pumpkins were set on delicate green doilies. The tablecloth was pale yellow paper, the place mats green oblongs cut from blotting paper. Effective and economical! Each guest took her blotter home!

* * *

Beauty isn't in lavish decorations, it's the bit of colour round about us.

* * *

We keep the contents of opened packages of brown sugar and marshmallows soft and moist by storing them in the bread box.

* * *

Use the corrugated paper cartons that come on light bulbs to pack cookies for gifts. If you mail them, place this package in a can and send the cookies free from breakage.

* * *

Secret of crispiness in shoestring potatoes is "Salt only when ready to serve!"

* * *

Sweet potatoes have more natural sweetness than other vegetables. Let them add sugar to your meals.

Favourite Fruited Pudding

- 1 lb. suet
- 2 cups pastry flour
- 3 cups bread crumbs
- 1 lb. raisins
- 1 lb. currants
- 1 1/2 cups chopped apple
- 1/2 lb. mixed peel
- 1 cup candied red cherries, chopped
- 1/2 cup shredded almonds
- 2 cups sugar
- 6 eggs beaten until light
- Grated rind and juice 1 lemon
- 1 tsp. mace
- 1/2 tsp. cinnamon
- 1/4 tsp. cloves
- 1/4 cup brandy

Wash and dry raisins and currants. Combine with rest of ingredients. Pour into greased molds and steam 4 to 5 hours. Cook in pressure cooker at 15 lbs. for 40 minutes.

Minced veal moistened with concentrated celery soup makes a very good sandwich filling.

* * *

Winter will be chilly. Canadians may feel the lack of coal so it is very important to get the maximum heat out of every shovelful. A dirty furnace does not heat efficiently so start now to clean off the scale from the heating surfaces in the furnace or boiler and give the chimney and smoke pipes a good cleaning. Warped windows and doors also waste heat, so get out that new weather stripping and have your house as snug as you please when the first winter winds blow.

* * *

All eyes are on the potato. Ontario's bountiful crop has given us reason to use potatoes as a substitute for thickening soups, making scones and many other dishes because of their low cost and nutritive value.

* * *

A man said this: I put the alarm clock in the sock at night so that the sound is softened. . . There was less sock in the bell!

Plastic measuring spoons in the medicine cabinet mean: (1) accurate dosage and (2) good silver isn't tarnished or stained.

* * *

Santa Claus spends a big sum for dolls these days. It's a good idea to stuff dolls' heads to prevent the eyes being poked out. If possible, take the head off and stuff it with some old cotton and then replace.

* * *

Tart jelly stirred into stiffly-beaten egg white makes a frosting of sweet smoothness in a lovely pastel colour.

* * *

A hook screwed into the handle of my broom is very handy for reaching objects on high shelves and for pulling down an elusive window shade. Hanging the broom up by this hook also helps to preserve the bristles.

* * *

To restore the lovely lustre of brass or copperware, dip a cut lemon in salt and rub it on the tarnished surface. Lemons you have squeezed for juice are good for this purpose.

* * *

Using a double-edged razor blade to open seams is a hazardous procedure. You are apt to cut yourself. Scotch tape or adhesive tape can be used to cover two-thirds of the blade to keep it more secure.

* * *

Damp cotton or bread is best for picking up tiny pieces of broken glass.

* * *

Sewing machine needles can be sharpened by stitching through fine sandpaper a few times.

* * *

French dressing won't separate if you add the yolk of an egg.

DOWN THROUGH THE YEARS

ELECTRICAL HISTORY: PART 8

By Herbert C. Powell

Let us pause in this series of Electrical History to learn a few lessons from a study of the twenty-three electrical pioneers whose stories have appeared in Hydro News since March 1946: Gilberd, Faraday, William Thomson (Lord Kelvin), Maxwell, Oersted, Ampere, Ohm, Gauss, Weber, Henry, Morse, Wheatstone, Westinghouse, Edison, Brush, Weston, Elihu Thomson, Dwight, Bell, Wright, Ahearn, Nichols and Rosebrugh.

All were young men under thirty years, and many under twenty, when they made their most important discoveries.

Nearly all were poor, having to work long hours in the day or night, to earn a living in some job they did not like.

They devoted their spare time when off duty, often far into the night, carrying on their studies and experiments. They gave far more service than was paid for.

"Look-It-Up" Habit

Nearly all had little opportunity of a college training; but they read everything they could find that would help. This is the "look-it-up" habit, reading for a purpose, searching for every bit of technical and historical information relating to each part of a project.

In trying out new ideas, materials and methods, they worked one step at a time, trying one thing after another, overcoming all sorts of troubles and difficulties. This is the "step-by-step" method.

The problems of financing an enterprise, obtaining funds to pay the costs of making and developing, required daring, resourcefulness and special knowledge.

They were compelled to face discouragements, disappointments and attempts to steal their ideas and prevent success.

Pioneers In Business

From the experiences of Westinghouse, Edison, Brush, Weston, Elihu Thomson, Dwight, Bell, Wright, Ahearn and Nichols—men who were pioneers in building a business—we find that they were forced to obtain knowledge and experience in the twelve main divisions of a manufacturing business concern: 1. Engineering and design; 2. manufacturing; 3. transportation; 4. purchasing; 5. buildings' maintenance; 6. personnel (employees relations); 7. sales; 8. advertising; 9. legal; 10. accounting; 11. auditing; 12. miscellaneous executive (records and communications).

Because it was impossible for any one of these pioneers to attend to everything himself, he selected certain men to be in charge of certain divisions of the organization, and certain other people to be supervisors and foremen, all of whom were called upon to act as leaders. As an organization increases in size, it is usual to have a president, several vice-presidents, board of directors, a general manager, a head of each main department, a supervisor of each section of a department, and a foreman over each group of workers. The total of all of those in the executive supervising group equals about fifteen out of every hundred employees, which means a proportion of fifteen leaders to eighty-five followers.

Keep On Time

Each employee who wants promotion must train himself so as to be prepared to advance step-by-step as opportunity occurs. Here is where the step-by-step, duty-plus success formula operates. Make yourself the best you can be in each part of each job. Think of new ways to do things which are better, easier, quicker, and then try them out. Search for new ideas and combinations of ideas. Keep records of unsolved problems and the details of solving them. Use a filing system for what you read, learn and accomplish. Carry the main points of each subject in your head, and know where to find the details in your own filing system, in books, in magazines and libraries. Leaders are readers. Make a time table of your time, and what to read and study; then drive yourself to keep on time.

Educational Services

There are opportunities to obtain a better education for those who have a strong enough desire and determination, no matter where they live, in city, town, village, farm, bush or wherever the postal system goes. The Provincial Government provides educational and library services. In the cities and towns, day and evening schools give many courses of study and practice. Excellent books have been published on practically every subject. There are magazines on almost every line of activity. Correspondence courses are available on many subjects.

The Association of Professional Engineers of Ontario was organized in 1922 for keeping up the standards of engineering practice, and for raising the qualifications of engineers. Certificates are issued to engineers to practise engineering when they measure up to the requirements and the examinations. To really get ahead,

it is almost necessary now to be a college graduate in engineering. Nevertheless it is possible for an energetic young man to study engineering during spare time while earning a living in practical work, then try the examinations of the professional engineers. It is estimated that it takes about fourteen years of spare time study to obtain the equal of four years of college.

Opportunity For Discussions

Almost every group, trade, business, technical, professional or agricultural has an association for improvement and fellowship of its members. One or more conventions are held each year, and, in some groups, monthly meetings give opportunity for lectures, papers, and discussions. In the technical groups it is usual for each person who presents a paper on an important subject to also provide a list of historical references to what has already been published on the same subject. Some public and private libraries contain copies of published papers of associations, usually in bound volumes of transactions, and also have books, pamphlets, and magazines for those who take the time to "look-it-up". The librarian is your best friend.

The Canadian Electrical Association was organized in 1891 for the holding of annual conventions in various parts of Canada, so that representatives of electrical utilities could meet one another, and discuss technical and business matters. This association has carried on successfully for fifty-five years, and for many years was affiliated with the National Electric Light Association of the United States. In 1933 the N.E.L.A. changed its name to Edison Electric Institute. The first president of the Canadian Electrical Association was J. J. Wright, Toronto Electric Light Company. The second president was K. J. Dunstan, Bell Telephone Company and the third president was A. B. Smith, Great North Western Telegraph Company.

Will Celebrate Anniversary

The Engineering Institute of Canada will be celebrating its sixtieth anniversary in 1947, having started in 1887 under the name, Canadian Society of Civil Engineers, and changing in 1917 to the present name. Branches of the Engineering Institute are located in many cities of Canada, where meetings are held monthly, and sometimes semi-monthly. Technical papers are presented by the members, covering a wide variety of engineering practice. Many of these papers are published in the monthly issue of the Journal.

The Toronto branch started on October 12, 1906.

Cover Broad Field

The American Institute of Electrical Engineers was organized May 13, 1884, in New York. In 1903 the Toronto section of the institute was started. Semi-monthly meetings are held for technical papers and discussions. Semi-annual conventions in various parts of North America bring together electrical engineers from all over the continent. Technical papers and discussions covering a very broad field of electrical subjects are kept up to a high standard. A large number of committees, on almost every type of electrical apparatus and system, gather information on their development, and submit yearly reports. A monthly journal, called *Electrical Engineering*, contains a vast amount of engineering literature and history. Annual bound volumes and indexes of the *Transactions* have been pub-

lished since 1884. The A.I.E.E. is one of five engineering societies which jointly operate the Engineering Societies Library in New York. This library contains a copy of almost every book and magazine that has ever been published relative to electricity and equipment.

There are now over sixty branches in which electrical engineers may specialize. Almost every branch has an association and literature of its own. No attempt is made here to mention these branches or to delve into their histories.

Challenge To Everyone

Here is a challenge to everyone who reads this. Become a specialist in some one or more things. A hobby often becomes a life work. Five minutes a day for five years will make you a specialist in almost anything. It is the steady daily plugging that achieves. The five tools of achievement are: will power, memory, observation, adaptability and re-

sourcefulness. Look a long way ahead, at least to age sixty. Lay out plans for reading, study and development for five years ahead.

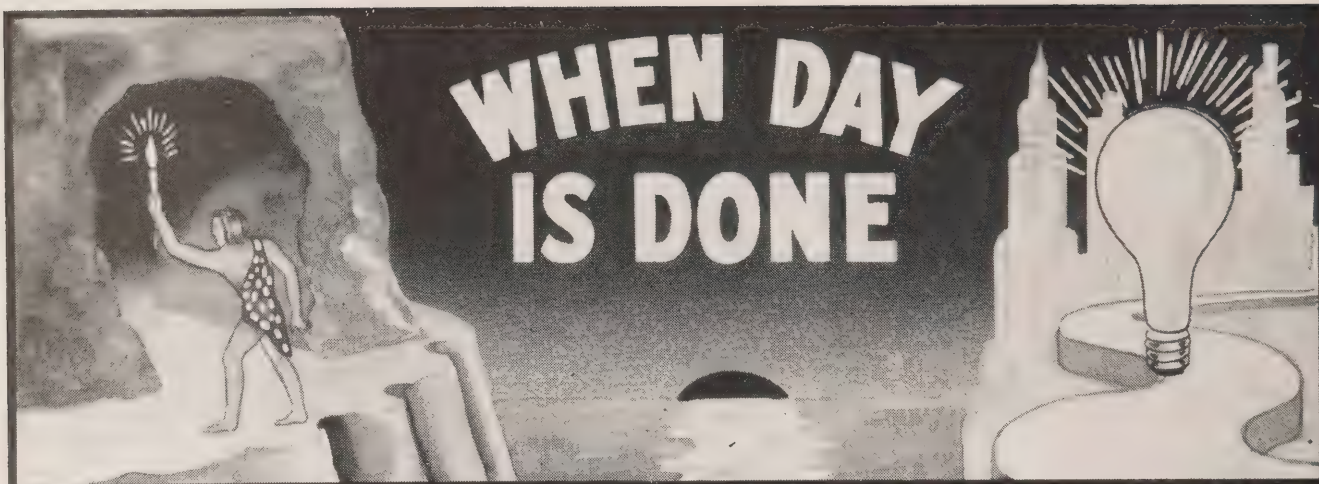
Success is the achievement of objectives. Follow the success formula: step-by-step, duty-plus. Success comes by doing what you don't want to do when you don't want to do it.

Job Seeks The Man

Opportunity is preparedness. When you are prepared, opportunity is ready waiting. The job seeks the man. It is often necessary to make opportunities, to make jobs for yourself, to be very resourceful in finding and making new ways of doing things, to discover needs and problems, then set out to supply those needs and solve those problems. Watch trends, change quickly when necessary. He profits most who serves best.



*PIONEERS IN the Electrical Industry in Canada at the fifth annual convention of Canadian Electrical Association in Ottawa, September, 1895, in House of Commons. Left to right: Henry P. Dwight, A. B. Smith, K. J. Dunstan, C. Berkely Powell, Ottawa, a past Vice-president, C.E.A.; C. H. Mortimer, a former secretary, C.E.A.; J. J. Wright, J. J. Wright, President, C.E.A., 1891-93, Toronto Electric Light Co.; K. J. Dunstan, President, C.E.A., 1894-95, Bell Telephone Co.; A. B. Smith, President, C.E.A., 1895-96, G.N.W. Telegraph Co. For biographies of Mr. Dwight and Mr. Wright, see *Hydro News*, September, 1946, pages 18-19. This picture appeared in *Electrical News*, October, 1895. This group is representative of the following industries; electric, telegraph, telephone, steam. H. P. Dwight, President and General Manager, G.N.W. Telegraph Co.*



CHAPTER VIII

Story of Gas Lighting

By Mildred C. Redmond,
Hydro News

One more of the unanswerable questions of history is: Why, when the ancients knew about gas, didn't they make use of it for lighting? Chinese necromancers are said to have used the gas from "fire wells" in the province of Tsee-Leiou-Tsing by collecting it in skins in which pin holes were made; the jets of gas issuing from these were lit. However, it did not occur to them to make any practical use of this phenomenon. Throughout history there are isolated accounts of various observations of natural gas. In 1618 Jean Tardin, a French doctor, published a book describing experiments he had made in producing artificial gas from heating crushed coal in a closed vessel. What led him to these experiments was the fact that he had traced escaping gas from a "fire well" near Grenoble to bituminous coal beds in the district.

"Water" Burned Like Oil

In 1667 Thomas Shirley gave a report to the Royal Society in London, based on an experience he had at Wigan, where, "the people of the town did confidently affirm that the Water of the Spring did burn like oil. When we came to the Said Spring and applied a lighted Candle to the Surface of the Water, there was, 'tis true, a large Flame suddenly produced which burnt the Foot of a Tree." Shirley went on to show that it was not the water, but gases bubbling through the water, that gave the flame. At the end of the 17th century, a Dr. Clayton followed Tardin's steps by tracing the origin of the gas to underlying coal beds. He suc-

ceeded in distilling it from the coal itself and stored it in bladders. In these he pierced holes and lighted them, as the ancient Chinese had done. However, neither he nor others experimenting in the same way at the time followed up their experiments.

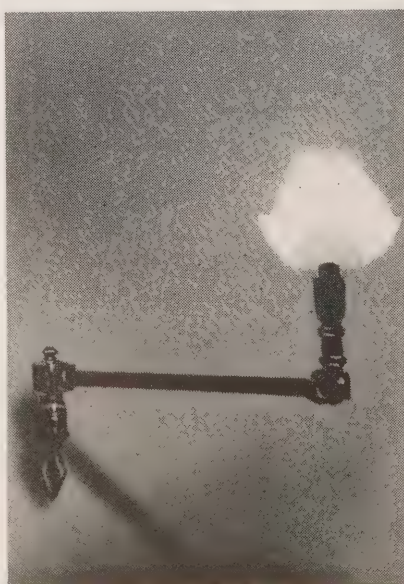
Lighted His Way Home

In 1726, in a book entitled "Vegetable Statics," Dr. Stephen Hales describes how, by distilling 158 grains of Newcastle coal, he obtained 180 cubic inches of gas. In 1773 a paper in "Philosophical Transactions," after describing the behaviour of gas in a coal pit, calling it "damp, corrupted air," goes on to say: "The said air, being put in a bladder and tied down, may be carried away and kept

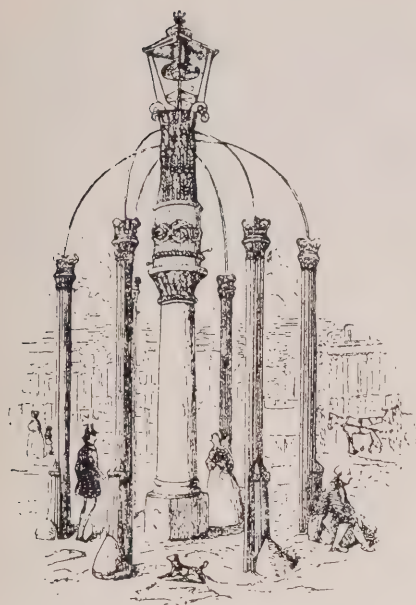
some days, and will take fire and burn at the end of a pipe." In after years, with a bladder such as this under his arm, William Murdock lighted his way home at the end of a winter day, much to the astonishment of his neighbours in Redruth, Cornwall.

Gas From Coal

The honour of being the first to discover that gas from coal might be used for lighting purposes can be divided among at least three people who worked independently and, without knowing of each other's work, made coal gas and used it for lighting. Lebon, a Frenchman, had his invention based upon a patent which he took out for what he described as a "New Method of Employ-



GAS LIGHT for the home as it was known around the 1850's, an open flame burner (left) with no attempt made to shade it or throw the light. Right: gas light after the improvements of the incandescent gas mantle, about 1885. This light has a protective glass as well as some decorative brass work.



EARLY ATTEMPT at decorative gas lighting. This elaborate structure was erected in the Strand in London just before the middle of the last century.

ing Combustible Fuel with Greater Utility, Either for Heating or Lighting and to Obtain Certain Products Therefrom." His discovery is dated 1791; he disclosed it to the French Academy in 1798, and his patent was granted in 1799, but it was not until 1802 that he publicly exhibited gas lighting in a house in Paris.

Peter Minckelers, a Dutch professor, apparently used gas to light his lecture rooms around 1785. However, there is not much accurate information about it and his discovery seems to have got no further than these class rooms. It was William Murdock, an engineer in England, who first had the idea of turning his experiments to both practical and commercial use. In 1792 in Redruth, Cornwall, he began experimenting with various kinds of gases. He found that the gas by distillation from coal, peat, wood and other inflammable substances burnt with great brilliancy and by confining and conducting the gas through seventy feet of tinned iron and copper tubes he was able to light up his own house and garden. At first he simply set fire to the open end of the tube, and later the tube was closed and holes pierced laterally to act as burners. The story is that he borrowed his wife's thimble, which was full of small holes, to put over the end of the tube and this gave him the idea of burners. In 1797 he lit up Watt's new foundry at Old Cumnock in Ayrshire and in 1798 Boulton, Watt and Company's works for the manufacture of steam engines at Soho, near Birm-

ham. At the same place, a public display of gas illumination was made in 1802 to celebrate the Treaty of Amiens and attracted wide public attention.

It was a German, Frederic Albert Winsor, that we have to thank for the first real utilization of gas for lighting purposes. He went to England in 1803, took out a patent for the manufacture of both gas and coke and attempted to organize the National Light and Heat Company. He publicly demonstrated the possibilities of gas by lighting the Lyceum Theatre in London in 1806 and in December, 1806, he laid lead pipes in Pall Mall. On January 28, 1807, one side of the street was lighted by gas and later both sides. This was the first street of any city to be lighted in this way.

"C'Est Une Grande Folie"

As with all revolutionary changes it was at first greeted with the greatest suspicion and even jeers. Sir Walter Scott wrote to a friend: "There is a madman proposing to light London with—what do you think?—why with smoke!" Napoleon when he heard of it dismissed the whole idea with "C'est une grande folie," and even the scientific Sir Humphrey Davy remarked: "It would be just as easy to bring down a bit of the moon to light London as to succeed in doing so with gas," and when plans went forward to light the streets he asked sneeringly if they were planning to use the dome of St. Paul's to store the gas.

When the lights actually came on in Pall Mall Londoners were both terrified

and impressed. It is said that they gathered at both ends of the street to stare, not daring actually to walk under the lights. For many years there were strange ideas in circulation about gas. One was that it was highly explosive in character and another that the pipes became red hot and might explode at any moment. It was difficult to find enough lamplighters brave enough to take on the job; householders cautiously took their distance before they lit the lamps in their houses and there is a story that when the Parliament Buildings were first lit by gas, various members went up, in some trepidation, to feel the pipes and see how hot they were.

In spite of the distrust that greeted the new lights and even the violent opposition of such groups as the chimney sweepers, gas lighting went rapidly forward. Samuel Clegg, Winsor's assistant, was a man of great ability and he was, more than any other individual, responsible for the improvement and spread of gas lighting during the next years. Among other inventions, he patented the first consumer's gas meter in 1815. Business grew rapidly and by 1829 there were over two hundred gas works established.

Once the public got used to the idea they were most enthusiastic and the new lighting was the subject of conversation everywhere. One delighted user wrote to the paper: "Day and night one can keep a fire burning in the room without giving it the least attention. It can be suspended from the ceiling and lights up the whole room, there is no candlestick



THIS AMUSING little model portrays a tailor's shop towards the end of the last century. The cross-legged tailor is sewing by the light of the very latest thing in lighting, two gas-jets, one with the bare flame and the other with a glass shade. (Courtesy Science Museum London)

to cast a shadow and it doesn't smoke at all!"

Gas Carried in Rubber Bags

The new lights invaded not only the streets, public buildings, factories and houses but even railway carriages. The necessary gas was carried in long rubber bags within wooden boxes arranged on top of the carriages. A contemporary writer describes these lights as they were used in the new London underground: "The jets in the carriages are supplied by means of a gaspipe in communication with the bags on the roofs and extending from the backs of the vehicles themselves, while along the lower part of each portion of the train runs the 'main,' as it were, by which the bags are replenished from the gasometers established at the other end of the line. The gas holders are kept charged with supplies from the neighbouring gasworks. The light thus afforded to the passengers is so bright as to remove utterly all sense of travelling underground."

The earliest form of the gas burner was the "rat tail" consisting of a metal tube closed at the end and perforated with a single hole. By 1808 there were the "cock spur" with three small holes and

the "cockscorn" with a group of small holes. The former gave about one candle-power of light for every cubic foot of gas burned per hour. In 1816 came the "batswing" burner, a small, pear-shaped steel burner about one-sixteenth of an inch in diameter having a narrow slit at the top. Later a "fishtail" jet was developed, a burner in which two jets were united to form a single flat flame. The possibilities of electricity gave the gas companies a further impetus to make improvements. The invention that was responsible for the survival of gas lights after electricity had come was the mantle. Dr. Welsbach, after some years of experimenting, introduced the incandescent gas mantle in 1885, a "stocking" of silk or cotton fabric impregnated with rare earths. The mantle gave a stronger, clearer white light and used less gas.

Although gas was a revolutionary new form of light, there was no attempt made to design lamps to match the new invention, either for the street or the home. Gas lighting fixtures of the great century of gas light, approximately 1802 to 1902, had designs based almost wholly upon lantern, candle or oil lamp patterns.

While England was being introduced to the new lights, other countries were

advancing in more or less parallel fashion. Dublin had gas lighting in 1818, and Paris in 1819. The history of the gas industry in the United States dates from 1806 at which time David Melville, of Newport, R.I., lighted his premises by means of coal gas which he had manufactured himself. In 1813 he secured a patent and later used gas for lighting a cotton mill in Waterdown, Massachusetts. The safe lighting of cotton factories was evidently one of the things that the early promoters had on their minds. Murdock, in 1803, in discussing his new light had said: "The peculiar softness and clearness of this light with its almost unvarying intensity have brought it into great favour with the work people. And its being free from the inconvenience and danger resulting from sparks and frequent snuffing of candles, is a circumstance of material importance as tending to diminish the hazard of fire, to which cotton mills are known to be exposed." In spite of strenuous opposition, Philadelphia had gas lighting in 1816, Boston in 1821 and New York in 1823. The first Canadian city to have the new lights was Montreal where it was introduced in 1840 and so made a name for itself by being the first city in the British

(Continued on page 28)



THIS STALWART group are Consumers' Gas Company maintenance men ready to start on their daily round about the year 1911. In the background is a study in contrast, three of the street gas lamps stand beside one of the newly-introduced electric lamps (far right). Designed by H. C. Powell of the Toronto Hydro-Electric System, the electric installation is known as a five-light cluster. (Courtesy, Consumers' Gas Company).

#his and #hat

By The Editor

Clippings from old newspapers are sometimes both interesting and fascinating for they frequently reflect a style of journalism that is both quaint and highly academic when judged by the present-day style of newspaper writing which, as a rule, is fast-moving and streamlined.

It is true, however, that many weekly newspapers today adhere to a homey, chatty style which stands out in striking contrast to style of news presentation of metropolitan daily papers. The important fact to bear in mind, however, is that the weekly newspaper editor enjoys a more intimate association with his readers than the editor of a large daily and he seeks to interpret the passing scene in his community in a way which is enjoyed by his particular readers. We have always had the greatest admiration for the job which is being done by the weekly newspaper editor and, at the same time, we are conscious of the vital role which the big daily paper has to play in the lives of city people. Each to his own!

These observations were prompted by a clipping which we received from Frank L. Mills, superintendent of the Commission's Garage and Machine Shop at Strachan Avenue, Toronto. Frank tells us that this clipping, which is yellow with age, was found among old family papers when an aunt of his died some years ago. He thought it would be of interest to readers of Hydro News and we agree with him. The clipping in question, which speaks for itself, is headed "Obituary Notice" and reads as follows:

Died in Ancaster, at the residence of her father-in-law, on the 13th of last June, Martha Ann Hammill, aged twenty-one years, one month and thirteen days.

The deceased was born in the Township of Brantford, May 1st, 1835, and was raised up "in the nurture and admonition of the Lord". Her father, Mr. Clement, formerly of Hamilton, was a pious man, and a member of the Methodist Church. He was called away by death while Martha was young and

tender, and she was left in the care of her affectionate mother. For several years before her marriage, which took place on the 7th of January, 1850, she had resided in her mother's family, in the town of Brantford. A gracious revival of religion was experienced in the Baptist Church, Brantford, in the spring of 1855. One of the first who was led to "see Jesus" was our departed sister Martha, and at the same time, Mary, her sister. The incidents attending her conversion were very peculiar and striking, and the evidence of her change so marked as to leave no reasonable ground for doubt that she had passed from death unto life.

From the day that she espoused the cause of Christ till the day of her death she lived a most exemplary christian life. All who knew her loved her, for she needed only to be known to be loved. Her death was very sudden and unexpected, yet it was peaceful and triumphant. Her funeral sermon was preached in Ancaster on the 10th of June by her pastor, the Rev. Thos. L. Davidson, from Rev. VII: 15-17, to a large and deeply affected congregation, after which her remains were committed to the cold grave, to wait the call of the resurrection morn.

Brantford, July 21, 1857. DELTA

We wish to express appreciation to Frank for having granted us permission to make use of this clipping.

Just a reminder. Every Canadian who purchases Christmas Seals from the National Sanitarium Association is helping to stamp out tuberculosis. Using the proceeds of the Christmas Seal Sale, this association provided 100,000 free chest X-rays in Toronto and surrounding municipalities during the past year. The X-ray conducted in the Commission's Administration Building in Toronto, just a few weeks ago, was a first-hand reminder to Hydro employees, themselves, of the importance of this work.

Records show that tuberculosis kills more Canadians under 21 years of age than any other communicable disease. They also reveal that early discovery of

the disease means early recovery. It should be of more than passing concern to us all that there are some 60,000 Canadians who are suffering from tuberculosis at the present time.

In the light of these facts, it would not seem necessary to do more than remind Hydro employees that this year the Christmas Seal Sale Campaign commences on November 25 and continues until December 25.

To G. M. B. Lumgair of the accounting department, we are indebted for another contribution in verse. These lines, on Remembrance Day, are as follows:

(1945)

*As sinks the Sun
Blood red behind the hill,
The drums are silent,
And the fifes are still—
A cross of white,
And there our brother lies
His travail ended,
So the old year dies.*

(1946)

*Now from them comes
This challenge clear and strong—
Who died that Right
Might triumph over Wrong!
"No monument we crave,
No coronet,
'Save that ye
Serve a'ight'
Lest ye forget!"*

BRIDGE AND cribbage, which are popular pastimes among employees of Hydro municipalities, have been steadily gaining in popularity among Commission employees. Gordon Norris of the accounting department tells us that there are 48 members of the newly-organized men's cribbage club and 40 members of the ladies' bridge club. Both clubs have been formed under the auspices of the Ontario Hydro Club. George F. Aram heads the cribbage group and is assisted by secretary James Roughley and treasurer Norris. The affairs of the bridge club are directed by Helen Clements, Wanda Renninson and Phyllis McFadden with Margaret Scales acting as secretary and Pearl Enright as treasurer.

WHEN DAY IS DONE

(Continued from page 26)

colonies to have such a modern service. In Toronto gas street lights were installed the next year. In May, 1842, Charles Dickens visited Toronto and wrote that the town was full of life, bustle, business and improvements. The streets were well paved and lighted with gas. The new lights must have changed the whole life of the town. Up to that time the common means of breaking the darkness was tallow candles. Whale oil was expensive for common use and mineral oil had not been discovered.

As early as 1836 a committee had been formed in the city to consider gas installation. It was decided that a gas house be erected on the site of the old parliament buildings which had been burned down by the Americans in 1813. The gas plant occupies this site today. A company was formed and on December, 1841, the first lamps were lit. The lights at first were poor in quality and were



NEW PRESIDENT of the Ontario Hydro Quarter Century Club, Thomas McFadyen (left), is extended a welcome by J. H. Caster, retiring president.



PORCELAIN AND brass chandelier for gas light now in possession of the Consumers' Gas Company. It came by sailing ship from England about 1850 to be hung at the foot of the great staircase in the Parliament Buildings of Upper Canada at Front and Wellington Streets in Toronto. Gas was piped through it to gas jets in its eight ornate arms. (Courtesy Consumers' Gas Company)

very expensive. There were many complaints and in 1848 the original company was supplanted by the present Consumers' Gas Company.

Other Ontario towns followed soon after. Kingston had gas in 1850 and Brockville in 1853. In Toronto the new lighting had been greatly welcomed as the symbol of the new age but when



SOCIAL HOUR before lunch at the Kitchener O.M.E.A. District No. 6 convention being enjoyed by H. R. Henderson, Woodstock; G. W. Gordon, president, Kitchener; W. Ross Strike, K.C., H.E.P.C. commissioner; K. C. McLeod, Stamford.

a period of depression set in around 1861, the city council, figuring its finances, had to do some withdrawing. It ordered half the street lights to be discontinued and half the remaining lamps not to be lighted on the eight nights of each month when the moon was brightest.

Period of Progress

As well as having the general depression to worry about, the stockholders of the Consumers' Gas Company reported in 1862 that they considered the new discovery of coal oil for lamps a threat to gas lighting and to counteract it lowered their rates. However, by 1867 there was a general improvement in business and there followed a period of great expansion and progress in the gas lighting business.

Gas illuminations for special occasions were very popular. Gas pipes twisted into crowns, flowers and names illuminated Toronto when the Prince of Wales paid a visit to the city in 1860.

For a good many years gas light remained the only illuminant supplied by a public service company. The coal oil lamp did not prove to be any real threat. The more serious rival came in the form of the new electric lamp which was finally introduced, after preliminary trials, in 1883. By degrees it supplanted gas for lighting purposes and the future use of gas was to be chiefly for cooking and heating apparatus. Toronto's last gas street lights went out in 1911, and this same general change-over took place in other cities about the same period.

DOWN TO EARTH

(Continued from page 4)

it. Behind this exhibit were background panels featuring display material which stressed the need for adequate wiring in the city home or on the farm. On these panels is portrayed a correct interior wiring diagram from meter to breaker. A glance at this particular display shows the distribution of circuits to the various farm and home appliances which are illustrated in the form of photographs.

A Major Attraction

This Hydro model farm proved a major attraction to old and young alike. To many of the children, it was the kind of thing that they would like to find beside the tree on Christmas morning. However, if the Hydro men were unable to undertake to suggest such a possibility to Santa Claus, they were able to provide the kiddies with attractively-coloured school book covers which told the story of Hydro in simple language and by means of readily-understood illustrations.

Included in the Hydro exhibit were a number of new sample models of home and farm electrical appliances and equipment which were also inspected with interest by the many visitors.

While crowds were moving in a continuous stream to view the exhibits in the various hangars, the scenes outside on the runways, where all manner of mechanical farm equipment was on display, were reminiscent of Labour Day at the Canadian National Exhibition.

Then there were all these interesting side-attractions such as horseshoeing competitions and log sawing.

In the far-flung fields beyond the hangars and runways of the Port Albert Airfield, farmers matched skill with one another for the hundreds of prizes donated by firms and individuals for the winners in the many classes of tractor and horse-drawn plough events.

One cannot watch a ploughing contest without being conscious of that high degree of skill—perhaps artistry would be a better word—which must be attained before a contestant can hope to receive any laurels. One is also conscious of the quiet, earnest concentration of the contestants as they go about the job of ploughing a furrow that is straight and firm—furrows that are both uniform and even—for these are a few of the many points noted by the contest judges.

And as these artisans of the plough transform green fields into symmetrical undulations of black loam, which glisten in the sunlight, the spectator cannot but feel that there is a close analogy between the business of ploughing a straight furrow and the business of living.

While at the ploughing match, Hydro

News had the privilege of meeting J. A. Carroll, the secretary-manager, whose headquarters are at the Parliament Buildings in Toronto. He explained that agricultural societies, many of which had been in existence for over seventy years, had sponsored fall fairs and ploughing matches. In 1911, farmers, who had been active in these societies organized the Ontario Plowmen's Association for the purpose of promoting interest in good ploughing. In 1913, the first provincial ploughing match was held at Sunnybrook Farm—now the site of Sunnybrook Hospital—where 29 entrants took part. With the continued support of far-sighted farmers and of the provincial government these matches, with the passing of time, have occupied an increasingly important place in the lives of farmers and their wives and children.

Highlight Of The Year

At this year's international ploughing match, which ranks as the highlight of the year in ploughing competitions, there were 215 entrants in the various competitions, while there were approximately 125 exhibitors.

In the class 6 event—a tractor ploughing competition open to boys who were under 17, the first prize of $\frac{1}{2}$ horsepower motor, donated by the Commission, was won by Bob Timbers of Stouffville, while the second, a cash prize, went to Frank Ford of Hagersville.

Bob Timbers, Hydro News was informed, is a cousin of Fred Timbers who won the open tractor class award of a gold medal and a trip to Britain.

In chronicling this first post-war international ploughing match, one cannot overlook the outstanding contribution to the success of the event made by the hospitable town of Goderich and its citizens. To relieve the pressure on hotels in meeting the tremendous influx of visitors, private home owners threw open the doors of their homes and gave their guests a royal welcome.

Thousands who attended this event of events will eagerly anticipate the next one, and it's a safe bet many will want to return to Goderich.

H. W. MCGILL PASSES

H. W. MCGILL, superintendent of the Essex Public Utilities Commission, who passed away on November 3, in his 63rd year, had held that position since November, 1923, when he became associated with Essex P.U.C.

Mr. McGill was educated at Barrie Collegiate and at the O.A.C., Guelph, and was active in the Masonic order.

Surviving are his widow, a son, Thomas, and a daughter, Betty.



(We wish to acknowledge the kindly letter of appreciation received from Dr. E. W. Bradwin, Principal of the Frontier College, following publication of the story "Frontier Men" in the October issue of Hydro News. His letter is published below.—The Editor.)

"I am writing to express appreciation for the valuable space you spared in the October issue of Hydro News, and the kindly editorial reference you made to the work of the Frontier College.

Any merit or place that Frontier College has among campmen is due very largely to the fine type of young men who go out as labourer-teachers. Nearly 2,200, many of them graduates, have been in the work since it started, and their personal worth has won a niche with men.

The work is made much easier when local officials at an isolated camp are willing to co-operate. It is not necessary to say that invariably we have found Hydro officials in the various camps co-operative in furthering our activities.

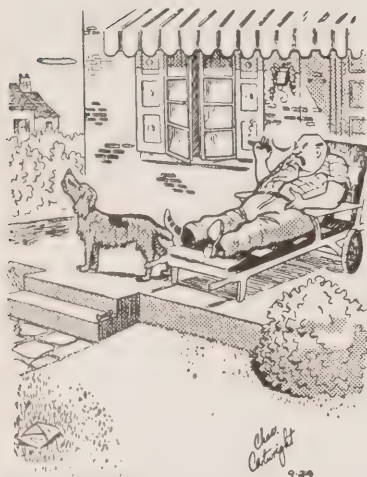
Your magazine is making splendid strides. Every success to you in meeting the needs of your particular field."—E. W. Bradwin, Principal.

SPEEDY RESPONSE BY BLOOD DONORS

Seventeen men from the H.E.P.C. municipal engineering department recently answered an emergency call from the Toronto General Hospital for blood donors to replenish the hospital blood bank. The emergency in this particular instance was for Mrs. Walter West, wife of one of the Commission's employees in the Huntsville rural operating area, who had been critically injured in an automobile accident.

Within half an hour after the request had been received, the following men had volunteered: D. K. White, C. E. Crease, A. B. Hayman, P. T. Seibert, C. E. Hansplant, B. F. Mulholland, E. R. Martyn, K. D. Bodkin, H. R. Graff, E. G. Bainbridge, Jack Campbell, G. R. Currie, H. J. Edwards, G. N. Shiels, Robert Mackie, E. A. Washburn and G. B. Pearson.

Lighter Lines



"All right then. . . Son of Roscoe the Third and Dawn Light out of Kalimar. NOW will you fetch the paper?"

Some More Definitions

Honest Politician: One who when he is bought stays bought.

Kiss: A noun, though often used as a conjunction; it is never declined; it is more common than proper and is used in the plural and agrees with all genders.

Philanthropist: One who returns to the people publicly a small percentage of the wealth he steals from them privately.

Repatee: An insult with its dress-suit on.



"These eggs may be from the country, but WHAT country?"

Said an envious, erudite ermine,
"There's one thing I cannot determine:
When a dame wears my coat
She's a person of note,
When I wear it, I'm called only vermin."

A good listener is not only popular everywhere, but after a while he knows something.—(Wilson Mizner.)

An electrician returned home one night to find his small son's hand swathed in bandages. "Hello," he said, "hurt your hand?" "Not exactly," said the boy, "I just picked up a bee and one end wasn't insulated."

Life, for most of us, is a continuous process of getting used to things we hadn't expected.

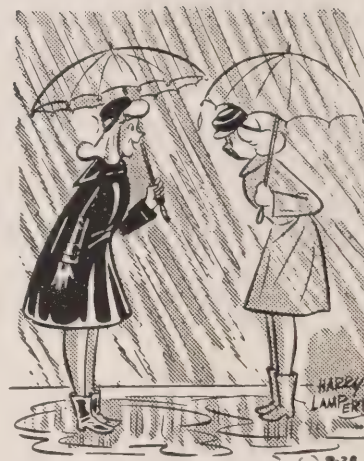
A farmer in the region of a training camp for paratroops during the war, was walking through a field and saw one of the troopers dangling from a tall tree. "I was trying to make a record," the soldier explained. "Well, you sure did, stranger," the farmer observed, "you'll be the first man around these parts that ever clumb down a tree without climbing up it first."

A college education never hurt anyone willing to learn afterwards.

Stealing a kiss may be petty larceny—but sometimes it is grand.

In these days you've got to beat the other fellow, but when a certain war plant produced a piece of 120-gauge wire, which is virtually invisible, the boys felt they had reached the ultimate in skill. They were so proud of it that they sent a section of it to a rival plant with the message, "This is just to show you what can be done." No word came back for some weeks, then a package arrived. Inside was a steel block on which were mounted two steel standards between which was the same piece of hairlike wire. A small microscope was delicately focused on a certain spot. When the engineers looked at it they found their rivals had bored a hole in the wire.

Nothing is more significant of men's characters than what they find laughable.—(Goethe.)



"This is no ordinary raincoat. This one is repulsive!"

A certain medical doctor was invited to a party and when the refreshments were passed, his hostess said: "Do you like lobster salad, doctor?" "Not particularly," he replied, "but I'm grateful to it."

Fanatic: One who redoubles his energies after he has forgotten his aim.

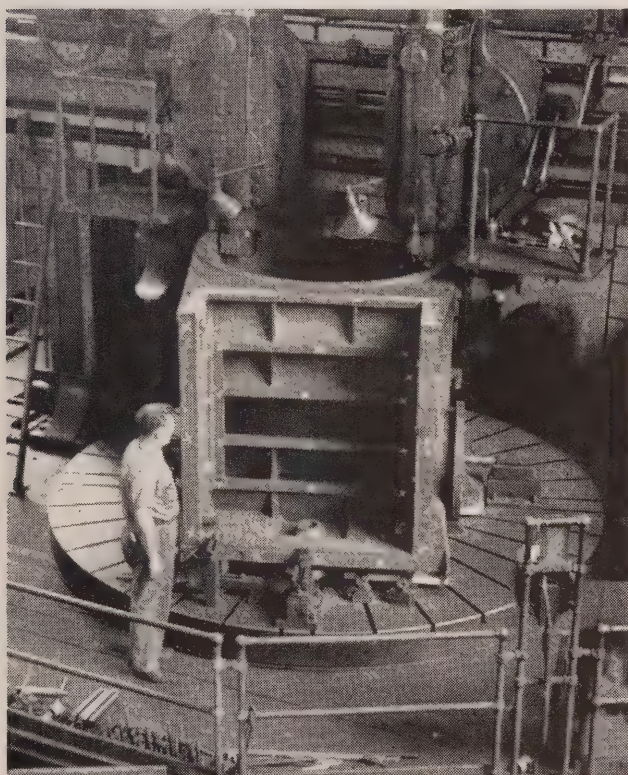
From an ad in the Toronto Daily Star: A young woman wants washing and cleaning daily.



"If you'll only take your shoes off, Mr. Brinkman! He wants to bring them to you!"

Hydro at Work In Industry

HORIZONTAL BORING MACHINE



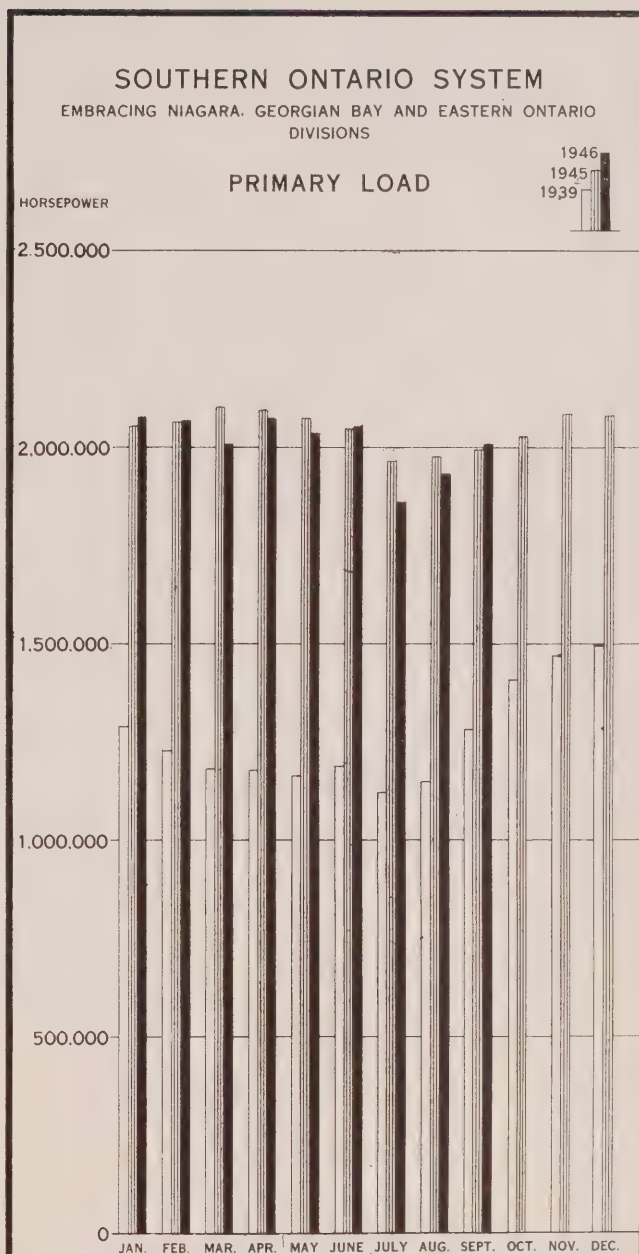
Boring machines are of two general types, horizontal and vertical and are frequently described as horizontal boring machines and vertical boring and turning mills. The horizontal machine shown above, said to be the third largest in Ontario, is owned by The Hydro-Electric Power Commission of Ontario and is in service at the Queenston-Chippawa plant.

Generally speaking, boring mills are used for precision work but have widespread applications in manufacturing. They are particularly adapted for the type of work that might be described as heavy and not easily revolved. The special applications of a borer are milling, slotting, drilling, tapping, boring and reaming long holes. A very convenient feature of these machines is that they will make interchangeable parts when they must be produced, without the aid of jigs or fixtures.

When this picture was taken, Hydro was helping an industrial firm, with a large war contract. This mill (shown above) was used at that time to bore the low-pressure cylinder for a marine engine which was later fitted into a 10,000-ton cargo vessel.

An impression of the size of the casting can be formed from the fact that the space bored out for the cylinder is large enough to accommodate a man.

While this horizontal boring mill is as big as a bungalow, it has the precision of a tool maker's lathe, and can machine a casting to a tolerance of 1/1000th of an inch. The main motor is a 50-horsepower gear drive installation, and seven other smaller electric motors are used in the various operations of the mill.



PRIMARY LOADS			
AREA SERVED BY	MAXIMUM 20-MINUTE PEAK H.P.		PER CENT INCREASE
	SEPTEMBER, 1946	SEPTEMBER, 1945	
SOUTHERN ONTARIO SYSTEM . . .	2,010,355	1,990,202	+ 1.0
THUNDER BAY SYSTEM	138,740	120,643	+ 15.0
NORTHERN ONTARIO PROPERTIES	214,923	211,539	+ 1.6
TOTAL	2,364,018	2,322,384	+ 1.8
PRIMARY AND SECONDARY LOADS			
SOUTHERN ONTARIO SYSTEM . . .	2,089,591	2,100,779	- 0.5
THUNDER BAY SYSTEM	145,979	126,139	+ 15.7
NORTHERN ONTARIO PROPERTIES	278,461	274,944	+ 1.3
TOTAL	2,514,031	2,501,862	+ 0.5

MUNICIPAL LOADS, AUGUST, 1946

SOUTHERN ONTARIO SYSTEM

NIAGARA DIVISION (25-Cycle)

	H.P.	Domes- tic Con- sumers		H.P.	Domes- tic Con- sumers		H.P.	Domes- tic Con- sumers
Acton	2,095	544	Erieau	335	197	Palmerston	728	400
Agincourt	280	168	Erie Beach	62	79	Paris	2,177	1,215
Ailsa Craig	213	147	Essex	789	528	Parkhill	327	315
Alvinston	156	205	Etobicoke	11,679	6,157	Petrolia	1,037	825
Amherstburg	1,324	734	Exeter	923	544	Plattsville	193	118
Ancaster Twp.	532	394	Fergus	1,687	770	Point Edward	1,698	349
Arkona	77	117	Fonthill	211	300	Port Colborne	2,030	1,655
Aurora	1,853	793	Forest	757	510	Port Credit	1,039	649
Aylmer	1,010	758	Forest Hill	5,945	3,567	Port Dalhousie	1,362	691
Ayr	392	227	Galt	12,845	4,296	Port Dover	865	750
Baden	574	168	Georgetown	2,543	833	Port Rowan	139	171
Beachville	765	167	Glencoe	252	230	Port Stanley	1,521	825
Beamsville	643	399	Goderich	2,149	1,361	Preston	4,337	1,689
Belle River	340	314	Granton	78	85	Princeton	200	98
Blenheim	729	560	Grimsby	1,189	655	Queenston	189	81
Blyth	196	184	Guelph	13,221	5,703	Richmond Hill	633	414
Bolton	310	172	Hagersville	1,329	406	Ridgetown	637	599
Bothwell	167	185	Hamilton	127,227	43,700	Riverside	1,385	1,559
Brampton	3,976	1,627	Harriston	653	378	Rockwood	195	174
Brantford	21,191	8,337	Harrow	836	350	Rodney	161	239
Brantford Twp.	1,839	1,476	Hensall	265	210	St. Catharines	28,317	8,742
Bridgeport	290	178	Hespeler	3,235	825	St. Clair Beach	130	102
Brigden	139	125	Highgate	119	107	St. George	222	154
Brussels	233	256	Humberstone	583	738	St. Jacobs	399	141
Burford	383	235	Ingersoll	3,718	1,568	St. Marys	2,273	1,076
Burgessville	112	64	Jarvis	187	163	St. Thomas	8,690	4,718
Burlington	1,906	1,234	Kingsville	768	641	Sarnia	6,798	5,403
Burlington Beach	699	732	Kitchener	22,677	8,718	Scarborough Twp.	6,235	5,950
Caledonia	428	452	Lambeth	144	140	Seaforth	1,217	524
Campbellville	66	50	LaSalle	379	259	Smithville	350	185
Cayuga	210	186	Leamington	1,987	1,688	Simcoe	3,052	1,678
Chatham	8,022	4,575	Listowel	1,807	801	Springfield	88	133
Chippawa	394	364	London	43,445	19,859	Stamford Twp.	3,577	2,497
Clifford	126	130	London Twp.	499	494	Stoney Creek	325	289
Clinton	885	593	Long Branch	1,870	1,564	Stouffville	606	408
Comber	170	120	Lucan	274	186	Stratford	8,948	4,561
Cottam	101	131	Lynden	134	105	Strathroy	1,844	876
Courtright	61	91	Markham	511	350	Streetsville	300	208
Dashwood	149	102	Merlin	102	124	Sutton	795	468
Delaware	96	71	Merritton	9,611	962	Swansea	2,792	2,096
Delhi	587	609	Milton	1,750	555	Tavistock	811	300
Dorchester	119	157	Milverton	547	263	Tecumseh	615	711
Drayton	189	167	Mimico	3,008	2,306	Thamesford	349	147
Dresden	605	466	Mitchell	942	521	Thamesville	272	243
Drumbo	147	90	Moorefield	116	56	Theford	162	166
Dublin	54	61	Mount Brydges	154	166	Thorndale	137	83
Dundas	3,118	1,458	Newbury	51	70	Thorold	3,310	1,274
Dunnville	1,685	1,063	New Hamburg	879	384	Tilbury	1,053	502
Dutton	272	234	Newmarket	2,473	1,022	Tillsonburg	1,901	1,243
East York Twp.	9,933	11,913	New Toronto	6,234	2,029	Toronto	360,884	154,302
Elmira	1,740	554	Niagara Falls	11,793	4,984	Toronto Twp.	5,077	3,065
Elora	595	355	Niagara-on-the-Lake	1,224	623	Wallaceburg	4,745	1,387
Embro	225	125	North York Twp.	11,100	7,019	Wardsville	66	65
			Norwich	559	391	Waterdown	317	280
			Oil Springs	195	104	Waterford	517	397
			Otterville	143	143	Waterloo	7,205	2,306
						Watford	495	312

MUNICIPAL LOADS, AUGUST, 1946

	H.P.	Domes- tic Con- sumers		H.P.	Domes- tic Con- sumers		H.P.	Domes- tic Con- sumers
Welland -----	11,470	3,264	Neustadt -----	47	110	Iroquois -----	389	279
Wellesley -----	187	137	Orangeville -----	979	746	Kemptville -----	480	393
West Lorne -----	422	227	Owen Sound -----	7,935	3,663	Kingston -----	18,771	7,867
Weston -----	5,154	1,700	Paisley -----	214	202	Lakefield -----	502	360
Wheatley -----	277	237	Penetanguishene --	1,418	773	Lanark -----	144	173
Windsor -----	47,291	26,909	Port Carling -----	466	211	Lancaster -----	49	116
Woodbridge -----	924	314	Port Elgin -----	879	509	Lindsay -----	4,022	2,289
Woodstock -----	8,663	3,448	Port McNicoll -----	141	241	Madoc -----	315	318
Wyoming -----	114	166	Port Perry -----	456	381	Marmora -----	111	249
York Twp. -----	20,375	21,946	Priceville -----	14	38	Martintown -----	65	56
Zurich -----	181	149	Ripley -----	140	129	Maxville -----	128	176
(66%-Cycle)			Rosseau -----	64	58	Millbrook -----	154	182
Bronte -----	213	244	Shelburne -----	361	314	Morrisburg -----	507	444
Oakville -----	1,692	1,285	Southampton -----	861	567	Napanee -----	1,797	897
Trafalgar Twp. -----	831	573	Stayner -----	429	341	Newcastle -----	305	230
GEORGIAN BAY DIVISION			Sunderland -----	126	140	Norwood -----	265	242
(60-Cycle)			Tara -----	162	164	Omeme -----	265	173
Alliston -----	625	447	Teeswater -----	226	233	Orono -----	110	183
Arthur -----	218	199	Thornton -----	45	67	Oshawa -----	19,874	6,765
Bala -----	536	336	Tottenham -----	145	161	Ottawa -----	35,544	15,658
Barrie -----	5,331	2,471	Uxbridge -----	538	423	Perth -----	2,164	1,110
Beaverton -----	433	331	Victoria Harbour --	126	271	Peterborough -----	21,340	6,702
Beeton -----	131	148	Walkerton -----	1,359	687	Pictou -----	1,798	1,336
Bradford -----	391	291	Waubushene -----	272	235	Port Hope -----	3,253	1,455
Brechin -----	85	53	Warton -----	518	437	Prescott -----	1,661	815
Cannington -----	343	262	Windermere -----	134	64	Richmond -----	118	85
Chatsworth -----	120	108	Wingham -----	1,119	560	Russell -----	115	119
Chesley -----	811	456	Woodville -----	105	116	Smiths Falls -----	3,685	2,012
Coldwater -----	233	159	EASTERN ONTARIO DIVISION			Stirling -----	452	293
Collingwood -----	3,010	1,650	(60-Cycle)			Trenton -----	6,272	1,833
Cookstown -----	142	119	Alexandria -----	420	415	Tweed -----	451	321
Creemore -----	240	176	Apple Hill -----	63	66	Warkworth -----	99	135
Dundalk -----	296	210	Arnprior -----	1,606	891	Wellington -----	524	343
Durham -----	536	464	Athens -----	167	183	Westport -----	151	149
Elmvale -----	200	191	Bath -----	82	64	Whitby -----	1,889	1,054
Elmwood -----	103	72	Belleville -----	8,924	3,939	Williamsburg -----	144	86
Flesherton -----	91	126	Bloomfield -----	163	181	Winchester -----	551	309
Grand Valley -----	240	184	Bowmanville -----	1,900	1,234	THUNDER BAY SYSTEM		
Gravenhurst -----	1,484	593	Brighton -----	711	563	(60-Cycle)		
Hanover -----	1,817	850	Brockville -----	8,013	3,101	Fort William -----	15,599	7,332
Holstein -----	22	63	Cardinal -----	537	394	Nipigon Twp. -----	307	243
Huntsville -----	1,492	744	Carleton Place -----	2,422	1,076	Port Arthur -----	21,004	6,099
Kincardine -----	1,062	741	Chesterville -----	409	248	NORTHERN ONTARIO		
Kirkfield -----	27	37	Cobden -----	168	160	PROPERTIES		
Lucknow -----	516	287	Cobourg -----	2,749	1,443	Nipissing District		
MacTier -----	173	128	Colborne -----	288	285	(60-Cycle)		
Markdale -----	232	231	Deseronto -----	331	395	North Bay -----	6,059	3,379
Meaford -----	1,111	757	Finch -----	156	107	Patricia District		
Midland -----	3,660	1,625	Frankford -----	230	262	(60-Cycle)		
Mildmay -----	196	184	Hastings -----	234	238	Sioux Lookout -----	344	512
Mount Forest -----	737	502	Havelock -----	203	295	Sudbury District		
						(60-Cycle)		
						Capreol -----	507	344
						Sudbury -----	10,715	8,734



One more can be one too many

Even Hydro cannot always find immediate room for one more consumer.

Present demands for Hydro power taxes existing facilities to the utmost. This is due to ever-increasing use of low-cost Hydro service plus necessarily restricted Hydro construction during and since the war. Shortage of materials and equipment makes it impossible to speedily accomplish expansion long since planned.

Lines and transformers now serving any one district can carry just so much power. Wherever that capacity is being completely used by present consumers, addition of new customers could be made only at the expense of service to the old, until new materials for extensions are obtainable. This condition applies in city, town and country. Everything possible is being done to overcome it. New equipment is being installed as fast as it becomes available. Your Hydro Commission trusts and believes you will recognize the facts; and assist, by your patient co-operation, in the orderly restoration of the prompt service that your Hydro always strives to maintain.



In the meantime, let your Hydro know as early as possible of any planned substantial increase in your power needs, and use this low-cost servant wisely.



THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO

HYDRO *News*





EMERGENCY!

- SAVE ELECTRICITY!

A critical power shortage now exists in Southern Ontario. Savings in the use of electricity will be needed on the part of all citizens in order to avoid serious difficulties during the present winter period, and Hydro is asking all consumers to conserve electricity wherever possible in order to relieve this situation.

**THE DAILY PERIOD DURING WHICH SAVINGS SHOULD BE
EFFECTED IS BETWEEN 8 A.M. AND 8 P.M., AND CONDITIONS
ARE PARTICULARLY ACUTE BETWEEN 4 P.M. AND 7 P.M.**

Factories and industry are asked to switch from day to night operation, in whole or in part, wherever possible, and also to effect all power savings practicable. Street lighting should be reduced to the lowest level consistent with public safety.

THIS IS HOW YOU CAN HELP

- Eliminate the use of electricity for signs, billboards and store windows from 8 a.m. to 8 p.m.
- Eliminate all Christmas decorative lighting until Saturday, December 21st, and again after January 1st.
- Turn off lights when not required.
- Use the minimum number of lights in the living-room, consistent with good vision.
- Do not use electric air heaters and grates.
- Use electrically heated water sparingly and check leaking hot water taps.
- Do not use range elements on "high" when a lower heat will serve, and turn off all elements as soon as possible.
- Cook oven meals as often as possible and avoid the unnecessary use of surface elements.
- Turn the radio on only for programs desired; if not listening, turn it off.
- Operate electric toasters and other small appliances only as needed.

The electric power shortage is a general condition following six years of war and arising from the fact that it was impossible to proceed with the development of sufficient new power sites during the war because of the requirements for war production. Since the war, the critical shortage of men and materials have seriously delayed the development of new sources of power.

The Commission has been reducing loads within its direct control, wherever possible. These reductions are not enough, and it is now necessary to appeal for assistance on the part of all consumers.

Hydro appreciated the splendid voluntary assistance on the part of its consumers during the war, and believes that similar co-operation will be forthcoming at this time.

THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO



THE HYDRO - ELECTRIC POWER COMMISSION OF ONTARIO

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THE FRONT COVER



LIGHTS on the Christmas Tree, glittering decorations, a gift wrapped in colourful and gaily be-ribboned paper . . . add these together along with a greeting card and get Santa to extend a helping hand and you have a Christmas picture.

In offering this front cover illustration for the Yuletide issue, the editor and staff of Hydro News seek to express, in a symbolic way, their sincere wishes for the happiness of all readers at this joyous season and throughout the coming year.

Volume 33

December, 1946

Number 12

CONTENTS

	Page
Christmas Message - - - - -	2
Page Three - - - - -	3
At The "Royal" - - - - -	4
Carleton Place - - - - -	6
Critical Power Shortage - - - - -	9
Santa Comes To Town - - - - -	10
Around The Hydro Circuit - - - - -	12
Operation Saw-Fly - - - - -	13
A Look At Sunnybrook - - - - -	15
Hydro Home Forum - - - - -	19
700 Years Of Hydro Service - - - - -	20
Down Through The Years - - - - -	22
This And That - - - - -	24
Lighter Lines - - - - -	25
When Day Is Done - - - - -	26
Atlantic Gateway - - - - -	30
Hydro At Work - - - - -	31
Monthly Load Summary - - - - -	31
Municipal Loads - - - - -	32





Christmas is here again and, although both as Canadians and as members of the Hydro family, we have many serious problems to face, we are privileged in being able to celebrate this day of joyful tidings in comparative peace and plenty. As the bells ring out their Christmas message, let us hope that an enduring world peace may be realized through the associated efforts of men of good will.

The exchange of greetings is an old Christmas custom, and we of the great Hydro family have surely every reason for heartfelt salutations, one to another, at this season of the year.

With sincere recognition of the part each one is playing, the Commission wishes each and everyone associated with Hydro a Merry Christmas and a Happy New Year.

W. R. Smith

J. H. Hagg
Osborne Whitcomb

E. H. Schellies

CHRISTMAS THOUGHTS

ALTHOUGH this year we shall celebrate our second Christmas since the cessation of world hostilities, the shadows cast by the war are but slowly receding, and it is unlikely that even here in Canada there will be a full return to the traditional seasonal festivities. A gloomy face, however, is no help to others in their present troubles, and while a boisterous carnival spirit would be distasteful to most Canadians while there is still so much unrest and misery in the world, too sharp a curb on the mirth and merriment associated with Yuletide observances can serve no useful purpose to mankind.

Let us then, in our fortunate position as Canadian citizens, be reasonably merry in this most joyful season, contributing by our cheerful spirit to that geniality and good-fellowship which is so necessary a foundation for a permanent peace. Nearly all the men and women of the services have returned from overseas, and everywhere there will be family gatherings and re-unions of kindred and friends. The eager voices of children will be heard around the Christmas tree, and there will be romping and laughter again.

Canadians, as a nation and individually, have been privileged to contribute in generous fashion to the amelioration of distressing conditions in other lands. And as we sit down to the festive board, the majority of us, it is fair to assume, will have no qualms of conscience in this regard. Let us not forget, however, those kindly little close-at-hand contacts, which have no advertising value and little of dramatic appeal, yet which, considered in their sum total, are perhaps the greatest of all contributions to an enduring peace throughout the world.

* * *

FREQUENCY CHANGE

THE interim report of The Hydro-Electric Power Commission of Ontario on the proposed standardization of electrical frequency at 60 cycles is now being studied by the municipalities. It is expected that, following this study, a decision will likely be made early in the new year.

While some impatience has been manifested by many who were naturally anxious to learn the implications of the proposed change, it should be

realized that the conversion of the 25-cycle area in Southern Ontario to 60-cycle frequency, while presenting no insurmountable engineering problem, would be a very big undertaking, involving not only large-scale physical adjustments but also heavy expenditures. It has, therefore, been the duty of the Commission to consider the proposed project in all its aspects.

In the broader view, technically, the advantages of 60-cycle power are sufficiently obvious, and elsewhere in this issue of *Hydro News* they have been described in some detail. It was clear, however, that, if the change-over were to be effected, some plan would have to be devised which would neither place a burden upon the consumer nor impair the financial structure of the Commission and its associated municipal utilities. The question of costs and their distribution had, therefore, to be given the most detailed study. Market conditions and price trends had to be scrutinized, and a time factor worked out which would provide for the absorption of cost on a basis of minimum expenditure.

As a result of this extensive work over a period of a year, the interim report answers all the principal questions necessary to enable interested parties to form an opinion.

On a 15-year programme envisaged by the report, a large proportion of the cost—estimated at approximately \$200,000,000—would be met out of reserves of the Hydro system and the remainder on a "pay-as-you-go" basis. Insofar as the cost of conversion is concerned, the effect on rates would be to maintain consumer rates at the 1945 level, with only a slight increase in wholesale power rates over those current in 1945.

The Commission would take care of alterations in the electrical equipment of domestic and commercial consumers. In industrial establishments alterations would be effected on an equitable basis, taking into consideration the depreciated value of present equipment and its future serviceableness. The Commission would look after all changes in equipment on its own system, while the municipalities would assume responsibility for changes in their individual distribution equipment.

It will be seen that the extra time and work involved in the preparation of this interim report has enabled the Commission to suggest a method which would ensure the proposed change-over being carried out with a minimum of inconvenience to consumers and with the maximum of co-ordination with post-war programmes of development and rehabilitation.

AT THE "Royal"



THIS MODEL miniature farm displayed at the Royal Winter Fair was designed to show how outside wiring should be installed to provide satisfactory electric service. It is built to a scale of $\frac{1}{4}$ inch to 1 foot, and is accurate in all details pertaining to exterior layout.

By Grace J. Carter, Hydro News

Thousands of people visited the Royal Winter Fair at the Coliseum on the shores of Lake Ontario at Toronto during "Royal Week," which extended from November 12 to 20. All in all, it was generally conceded to be a banner year in every way, and these visitors from all parts of Canada and the United States saw the various features of rural life and the Hydro exhibit in the display concourse.

The latter exhibit included two model miniature farms which are designed to show how outside wiring should be installed to provide satisfactory electric service. Built to a scale of $\frac{1}{4}$ inch to 1 foot, these table top farms are accurate in all details pertaining to exterior

layout. Each model consists of an up-to-date farm house with lawn, trees and garage; a barn with silo and animals in the barnyard; pumphouse, workshop, pig-gery, chicken house, implement shed, neatly ploughed fields and a realistic orchard.

Along with this exhibit were background panels developed to stress the need for adequate wiring in both the city home and on the farm.

Recognized as the show place of Canada's agricultural achievements, the Royal Winter Fair covers a floor space of 25 acres, all in steam-heated, steel and concrete buildings. To emphasize the various exhibits, special days mark each province's participation—the first being devoted to All Canada, and a day each for British Columbia, Maritimes, Quebec, Alberta, Ontario, Manitoba and Sask-

atchewan. Great interest is also manifested in the various classes for horses, cattle, sheep, swine, poultry, dogs, cats, as well as in the flower and fruit displays.

This year the Royal Horse Show, perhaps one of the most popular events, which accentuates both the national and international character of the Fair, featured many entries from the United States. There were also Spanish-American entries, as well as teams from Peru, Mexico and the United States. Incidentally, the international cup for the army officers' competition for 1946 went to the Mexican team. The hunter class was judged by the Rt. Hon. Lord Knutsford, a well-known English horseman, whose county house is Gostard, Corsham, Wiltshire, England.

Serving as a colourful and picturesque
(Continued on page 29)



AS MAY be seen, these prize Guernsey cows have won many ribbons, and when this picture was taken, another "first" was being added. This year approximately 2,000 cattle were shown at the "Royal."



SUCH A big horse for such a little girl to handle! "Scotty" (above) was one of 2,000 horses shown at the Fair and was stabled in the Equerry building where there are 680 box stalls and 498 open stalls, as well as ample stablemen's quarters. The little visitor is from Lloydtown, Ontario, and "Scotty" hails from Kaladar.



ANOTHER MODEL farm with its up-to-date farm house, garage, barn and silo, pumphouse, workshop, piggery, chicken house and implement shed. The pictures on the background panels stress the need for adequate wiring in both the city home and on the farm.



THE TWO pure white turkeys in the above illustration had a first prize ticket on their cage. Poultry Hall at the Fair has cooping accommodation for 8,000 chickens, turkeys, ducks, pigeons and cage birds.



THIS IS a section of the rose show which formed part of the flower court that served as a colourful and picturesque vestibule to the Royal Horse Show.

CARLETON PLACE

**By W. Ronald Mathieson,
Hydro News**

One story residents of Carleton Place like to tell about the formative years of their town, concerns a quack chemist who claimed his nostrums to be equally good for man or beast. Apparently, he overstepped the mark when he started to sell a "brew" which, on the label of the bottle, claimed to contain a few drops of electricity. Last seen, he was in great haste to reach the town limits.

The next time electricity made its appearance in the vicinity was in 1891 when an "electric light" plant was established to light places of business with the old direct current arc lamps. There were street lights, too, which were not turned on when there was any moonlight! In 1910 H. Brown and Sons built what was then an up-to-date plant on the Mississippi River. The Browns' interests were purchased in 1919 by the town which turned the whole system over to The Hydro-

Electric Power Commission of Ontario the same year. The water commission of the town, upon being given control of the new plant, became known as the Public Utilities Commission. It is a matter of record now that the peak load at that time was 600 horsepower which has been almost quadrupled in the last 27 years.

Careful planning and wise administration have been the determining factors in building up this load. The men who assumed the initial responsibility were: Late William Baird, chairman; R. W. Bates, who was the mayor at that time, and three commissioners, the late A. E. Cram, the late G. T. Fulton and the late William Findlay.

Carleton Place is located about 35 miles west of Ottawa in Lanark County and is the hub of a well-populated and mixed farming area.

Where the name came from is uncertain. When the first pioneers located

there in 1818, most of them veterans of the war of 1812 who had received land grants as a gratuity, they gave the name of Morphy's Falls to their new home. This was in honour of one of the leading families and is still a familiar name in the vicinity.

Then in 1830 when the settlement was incorporated into a village and was called Carleton Place, the name could have been derived from a suburb of Glasgow, Scotland, or from a misconception due to inaccurate surveying, that the town was in Carleton County. A map now shows that Carleton County is several miles removed from the borders of that municipal division.

The present population is over 4,200 and in Hydro statistics this breaks down into 1,105 domestic consumers, 185 commercial users and 18 industrial. To accommodate this load, almost fourteen miles of distribution lines have been erected.

As might be expected of the descendants of sturdy pioneer stock, mostly Scots and Irish, the majority of the people in

(Continued on page 8)



FROM THE front lawn of a Carleton Place home, which faces the Mississippi River, the Hydro News' photographers recorded this interesting picture of the bridge and town hall. This same river is teeming with fish according to the reports of local fishermen who should be "in the know".

LIFELONG FRIENDS and co-workers in civic affairs mayor George T. Coleman and town clerk W. P. Pattie were just finishing up a days' work and getting ready to go fishing when this picture was taken.



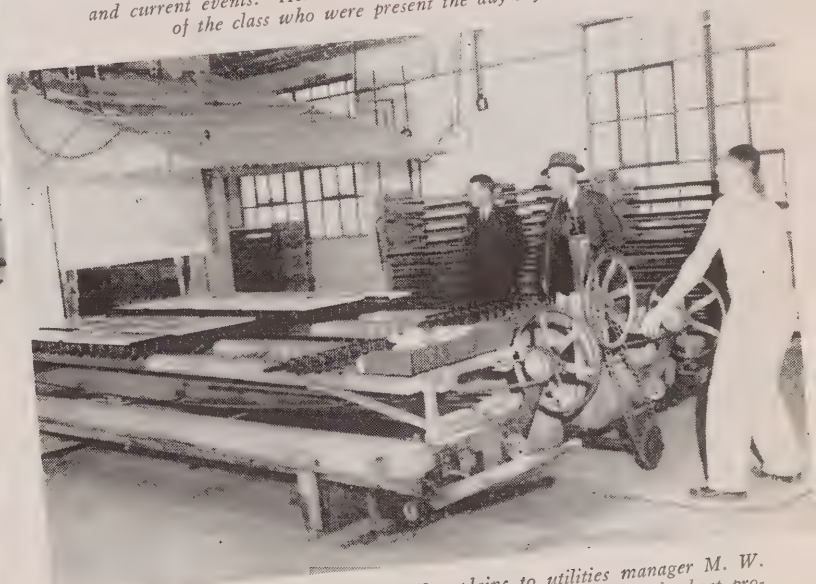
HYDRO NEWS visited commissioner T. E. McCaffrey at the woollen mills where he is a foreman. Here is Mr. McCaffrey showing an apprentice what to do in case the yarn gets knotted up.



AT ONE time there were five or six hotels in Carleton Place which is still recommended as a good place to stay. Here is one of the old buildings in town with the hitching posts still intact.



EACH FRIDAY afternoon throughout the school year, a group of school children go to the Carleton Place library where they learn about new books and current events. Here is Louise Elliott, the librarian, with the members of the class who were present the day Hydro News called.



COMMISSIONER G. E. FINDLAY explains to utilities manager M. W. Rogers how the enamel is baked on to glossy finished ranges by heat provided by electric furnaces. The glass-like paint is sprayed on and then baked into the metal.



CARLETON PLACE

(Continued from page 6)

town own their own homes, and over week-ends they seem to move "en masse" to cottages on the Mississippi.

The Mississippi River, rising 150 miles west of Carleton Place, flows directly through the town assuring an abundant supply of excellent water. This is used in a modern waterworks and sewage system to supply the needs of the town. The volunteer fire brigade also have a good "set-up" for pumping water from the river if the need ever arises. They use the town hall as their headquarters which in addition houses a library, and auditorium, council chambers and other quarters.

Good travelling and shipping facilities are "on the door step". The main line of the Canadian Pacific Railway, as well as three highways and an airport, which is just an hour's drive away, serves the industrial and business needs of the town and has also made Carleton Place very accessible so far as tourists are concerned.

Live wire bass fishing and hunting in

their respective seasons seem to be the attraction for both American and Canadian visitors, and the local chamber of commerce has done a fine job in making shopping and visiting something different.

The town is well provided with opportunities for other kinds of recreation. Right on the bank of the river is a picturesque nine-hole golf course which gives the "white pill chasers" plenty of opportunity to demonstrate their skill. Also, there are tennis courts and a municipal playground which is used by ball players and those who go in for lawn bowling, have a green of their own. During the winter in covered curling and skating rinks several championship teams have been seen in action, and in the hills around town, there are good skiing possibilities.

Having almost unlimited power resources from its tie in with the Commission and on account of its location in relation to markets, it is only natural that industry would thrive in Carleton Place. Two woollen mills, in town, Bates and Innis Limited and Renfrew Woollen Mills Limited employ between them almost 600



FROM THE office of the Public Utilities Commission at Carleton Place where these two lassies, Margaret Shane and Eleanor Matthews, work, it is just a stone's throw to a nice place to eat your lunch on the banks of the Mississippi river.



THIS CHARMING family gathering of Mr. and Mrs. M. W. Rogers and Mrs. John McMaster was taken in their home in Carleton Place. Mr. Rogers is the manager of the local Public Utilities Commission and his wife, in addition to being an accomplished musician, is a very fine cook. (Hydro News can verify this fact!) Residents of Perth will recognize Mrs. McMaster as a leader in social service work before she moved to Carleton Place.

workers and produce blankets, woollen goods, tweeds, rugs, yarns and other products which have a world-wide market. Findlays Limited, an old-established firm turn out furnaces and air-conditioning equipment as well as stoves and ranges.

The Public Utilities Commission, which is located on Mill Street just behind the town hall, is under the direction of M. W. Rogers who has the official title of manager and secretary-treasurer. Working along with him in the administration of Hydro affairs are; H. E. Sinclair, chairman, commissioners T. E. McCaffrey, G. E. Findlay and W. S. Bellamy and mayor George T. Coleman.

It has taken the town twenty years to get a second wind after having gone through a boom era that was common to many municipalities in Ontario. The day has gone when miners on their way to or from the Cobalt area stopped off over night in Carleton Place and six hotels were operated to accommodate them. Gone also are the roaring Saturday nights when the lumber jacks armed with ready fists and cash "did up" the town.

But the metamorphosis has been good for Carleton Place. The bulging general store has given way to well-appointed and smartly illuminated shops which line the main street. Substantial industries are there to stay and the town is entering a new phase of good Canadian life.

CRITICAL POWER SHORTAGE DEMANDS STRICTEST ECONOMY BY CONSUMERS

**Urgent Appeal For Voluntary Co-operation Made By Commission—
Present Situation Created By Disruption Of Plants For New Develop-
ments By War-Time Conditions And Post-War Shortages Of Materials**

An urgent appeal to co-operate voluntarily in exercising the strictest economy in the use of electricity has been made by the Commission to Hydro municipalities in Southern Ontario which, in common with other parts of Canada and countries throughout the world, is facing one of the most critical power shortages of all time.

This announcement was made at a special press conference held recently when Dr. Thomas H. Hogg, chairman, and Hon. George H. Challies and W. Ross Strike, K.C., commissioners, of The Hydro-Electric Power Commission of Ontario, discussed the present power supply situation.

The Commission, it was stated, had suggested in a letter to Hydro municipalities in Southern Ontario that the following specific measures might be adopted to effect the greatest economy and thus enable Hydro to get through the most difficult period, from now until the first of March:

Suggested Measures

(1) Eliminate the use of electricity for signs and the illumination of billboards from 8.00 a.m. to 8.00 p.m.; also eliminate window display lighting from 8.00 a.m. to 8 p.m.

(2) Eliminate all Christmas decorative lighting until Saturday, December 21st and again after January 1st.

(3) Curtail street lighting to the lowest level consistent with public safety.

(4) Exercise strict economy in homes, factories and commercial institutions. This involves:

(a) Turning off lights when not required.

(b) Avoiding the use of electric air heaters.

(c) Making the most frugal use of electrically-heated water (and checking up on leaking hot water faucets).

(d) Avoiding the operation of

range elements on high when a lower heat will serve the purpose and turning all elements off as soon as possible.

(e) Avoiding all non-essential outdoor lighting.

(5) Where practicable, endeavour to get industries to switch from day to night operation and exercise strict economy.

(6) Wherever possible, keep water-pumping loads and water-heater loads off the peak daily.

Programme Retarded

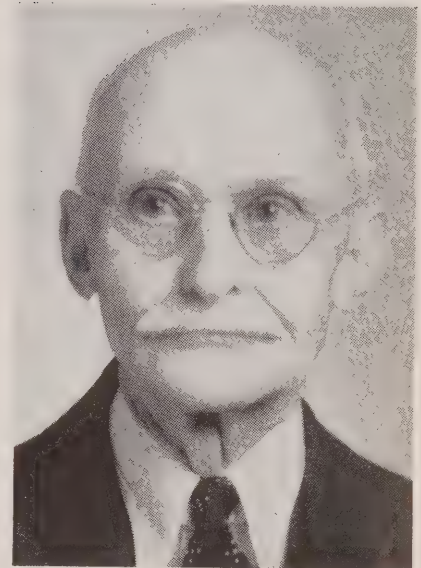
It was explained that during this heavy load winter season the supply of power in Southern Ontario was insufficient to meet the demand. This condition had developed because, during and since the war, the Commission had been unable to develop power in sufficient quantity to keep pace with the enormous increases in demand. Materials and manpower for vital industrial expansion during the war years had outranked the claims of utilities for the construction of new power plants and, after the war, shortages had seriously retarded the Commission's programme for the construction of new power plants.

The present power shortage, it was stated, had already resulted in the delivery of power to basic industries of Southern Ontario being severely interrupted at the time of peak demand between the hours of 4.00 p.m. and 7.00 p.m., and to a lesser extent throughout the entire working day from 8.00 a.m. to 8.00 p.m.

Speaking for the Commission, Dr. Hogg said that in a matter of such importance to the people of the province, and to the country at large, he hoped that a great deal could be accomplished through voluntary co-operation.

"I am, therefore, asking," he said, "the earnest co-operation of Hydro municipalities and all Hydro consumers at this time to do everything they can to save in the use of electricity."

EXPRESS APPRECIATION TO GEORGE M. HAMILTON



Residents of Thamesford have honoured George M. Hamilton who has completed 32 years' service as secretary-treasurer of the local Hydro system and 24 years as clerk of the village. The occasion took the form of a dinner given in the Continuation School Auditorium on November 5.

Mr. Hamilton has retired from his Hydro duties and plans to live in Brantford. Now 78 years old, he was the first man to hold this Hydro post as he came with the Thamesford system in 1918, the year when the residents voted to join the Hydro family of municipalities. It is interesting to note that the number of meters to be read bi-monthly has increased from 50 to 200 since he assumed office.

Born in Tillsonburg in 1868, he came to Thamesford in 1887 to follow the occupation of a miller and continued in this line until the advent of the Commission.

R. M. McKenzie, district municipal engineer, and C. E. Hodgson, an accountant of The Hydro-Electric Power Commission of Ontario, were both on hand, as well as P. W. Oliver, superintendent for the Dorchester district.

A presentation of a purse was made on behalf of the board of trustees who openly expressed their appreciation of Mr. Hamilton's many years of fine service to both the community and to Hydro.

Santa COMES TO TOWN

By W. Ronald Mathieson,
Hydro News

Heralded by martial music and tinkling bells, and accompanied by a colourful cavalcade of symbolic floats and a caper-cutting coterie of gaily dressed Fairyland folk, Santa Claus, riding high behind the traditional, prancing reindeer, once again laughed and waved his way into the excited hearts of young Toronto on November 16.

Children seemed to be everywhere that would provide a good vantage point. The Commission's administration building on University Avenue was swarming with youngsters who crammed into every inch of window space to see the parade.

They were the kiddies of Hydro employees who really take over "headquarters" on this carnival day. And in the background were the parents themselves, apparently as anxious as the kiddies not to miss anything.

Along the route taken by Santa Claus from his mysterious retreat in the North, it was estimated that there were 140,000 folk—not all young by any means. Not only were all the street cars pressed into service to handle one of the heaviest days in passenger traffic records in Toronto, but all available policemen were on duty. Thousands of people came by bus, train and car, and among them were children of employees of Hydro commissions from as far away as Stratford.

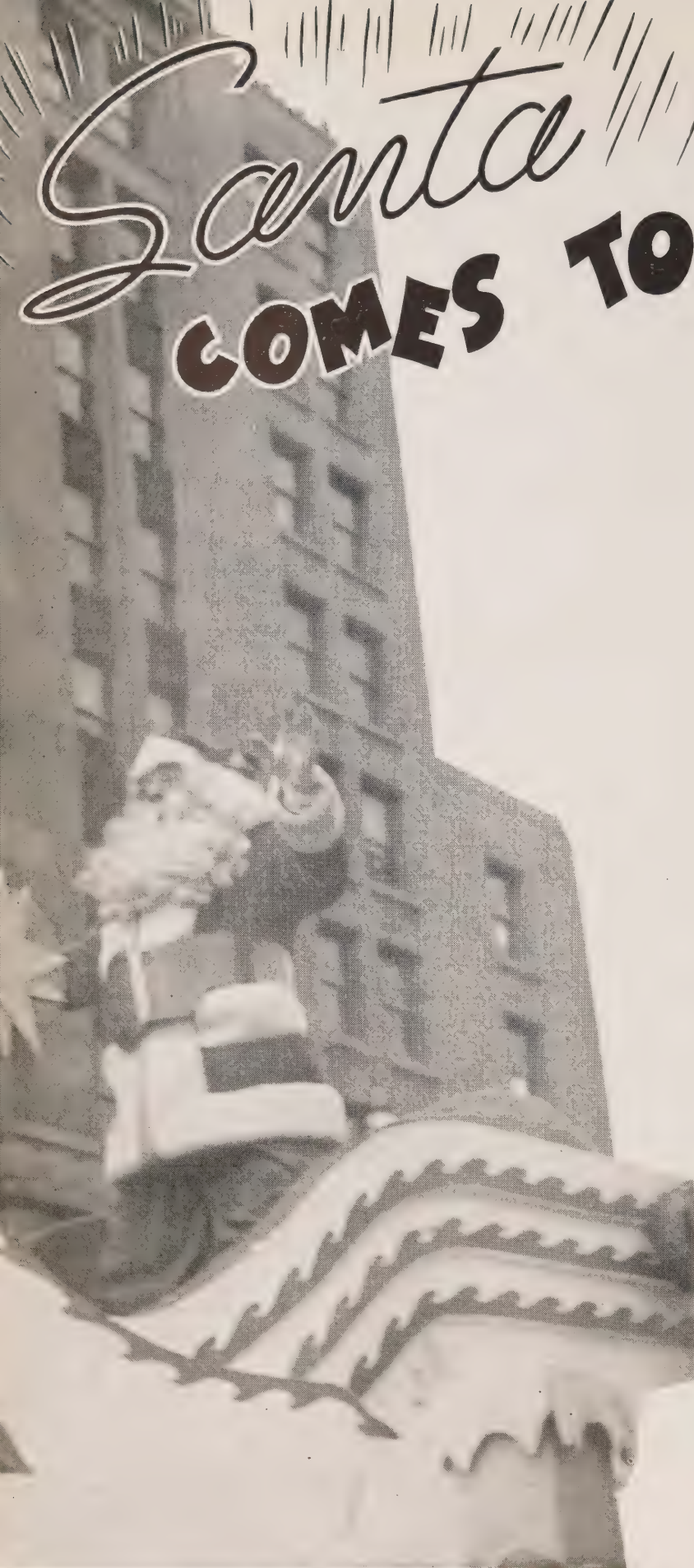
But to come back to the parade, which was acclaimed as one of the most colourful in history, it was headed by the band of the Governor-General's Horse Guards, and in that procession of some 800 story-book folk were more Humpty-Dumpties than any number of King's Horses could attempt to "put together again."

Catching the attention of young and old alike, Old Mother Goose rode on top of a giant goose float, and every time the float bobbed, the end of her nose lit up. However, it did not seem to bother her as she appeared to be kept quite busy mending holes in her gaudy stockings.

Old King Cole was a really merry old soul and any one could tell that Bo-Peep was still looking for her sheep because they were gambolling behind her back and she was hunting in every other direction.

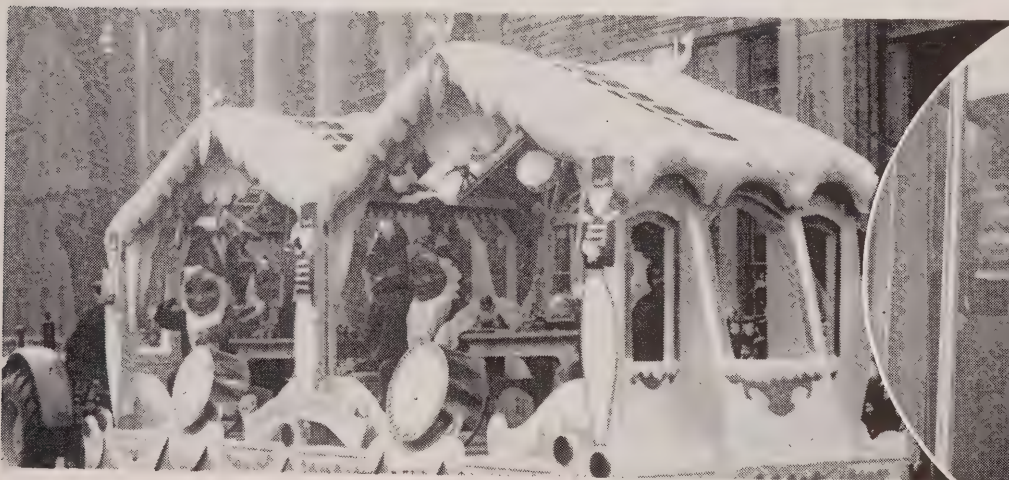
The young fry are still talking about

(Continued on page 29)





AFTER THE "grown-ups" had been segregated from the important visitors of the day to the Commission's Administration Building on University Avenue upon the occasion of the annual Santa Claus parade, the Hydro News cameraman went into action. Two of the children in the "Bulbs" are Lynn and Peter, grandchildren of Frank Willsie of the electrical engineering department, while looking out the window are Shirley Boustead, Lil and Pat Tanner and W. J. Burnett's grandson, Billy Hinton.



DIRECT FROM the North Pole came the toyland workshop (left) where funny little gnomes build the toys while inside the Hydro Building, children of employees of the staff of Stratford Public Utilities Commission get a big laugh out of the dwarf drummers.



M. M. MORRISON, who directs elevator traffic, lines up the visitors in orderly fashion keeping with the newly-inaugurated "step lively please" programme. Right, the rollie-pollie Humpty-Dumpties were "egg-actly" what many kiddies wanted to see.



AT CARLETON PLACE



Serving his fourth year as a Hydro commissioner at Carleton Place, WILFRED SINCLAIR BELLAMY was born in that town just half a century ago. After graduating from high school, Mr. Bellamy enlisted as a gunner in an anti-aircraft battery and served overseas during the First World War. On discharge, he returned to his native haunts and went into industry. Being an out-door man at heart, Mr. Bellamy spends much of his time at his cottage where there is good hunting and fishing close at hand.

TOWN CLERK

WILLIAM P. PATTIE, who was born in Carleton Place in 1887, is the son of the late William Pattie, the second Mayor of the town, who served on the council for over 20 years.

Mr. Pattie attended public and high schools in his town and in 1908 graduated from The Ontario College of Pharmacy. For the last twenty-one years he has had a drug store in Carleton Place.

In 1925, he was elected to town council and served in that capacity for three years. In 1938, he was appointed assessor, a position he held until 1941 when he became town clerk.

MAYOR G. T. COLEMAN

Carleton Place's mayor, GEORGE TRAVERS COLEMAN, is a native of the town who achieved considerable prominence while employed by the Canadian Pacific Railway Company. On his retirement from active work he was general superintendent of transportation of the entire system. His brother, also a Carleton Place native, is president of the same company, and his nephew, Jim Coleman, is a columnist with The Globe and Mail.

Mr. Coleman received his early education in local schools and in the town of Braeside. He began his career with the C.P.R., as a telegrapher when he was only 17 and for a time he was yard agent for Carleton Place.

In 1945 he was elected to the town council and this year he is serving as chief magistrate. Mr. Coleman takes a very keen interest in civic affairs as well as in service organizations. It is interesting to note that his grandfather, who settled in the district in 1818, owned the power rights for the Mississippi River.

COMMISSIONER FINDLAY

GEORGE E. FINDLAY, Hydro commissioner for Carleton Place and president of the eastern district of the Ontario Municipal Electrical Association, was born in Carleton Place in 1903. He attended local public and high schools and St. Andrews College, and graduated from the University of Toronto with a bachelor of commerce degree.

For the last 17 years, Mr. Findlay has served on the local Public Utilities Commission and has been chairman for about eight years. His grandfather, David Findlay, A Scottish moulder, settled in Carleton Place in 1860 and founded the manufacturing firm which exists to-day under the name of "Findlays Limited."

While at college, George Findlay was a noted swimmer and became an outstanding water polo player. Civic interests take up a great amount of his leisure time but he still manages to make some good photographs, do a little fishing and study the bird life of the neighborhood.

WHERE THERE'S A WILL OR RATHER SNOWSHOES



Members of the construction department are often called upon to face unprecedented problems, such as going through a swamp where there is not enough water to float a canoe and the silt is too oozy to support the weight of a man.

This is what they were up against at DeCew when large areas along the edge of the river had to be "sounded out." How they overcame it is shown in the picture of M. J. McNamara of the Commission staff who dragged out his January snowshoes in August and reports that they are fine for paddling through swamps.

However, some of the Hydro neighbours in the vicinity are still perplexed at what they saw, and are wondering if "Johnny" was not out in the sun a little too long.

THANK YOU LETTERS

Letters acknowledging the gift of a pair of artificial limbs by a war veteran, and a subscription to the Amps' Memorial Project have been received by the Ontario Hydro-Electric Club, according to information received by Hydro News.



ARMED WITH a potent spray of 3 percent "D.D.T." carried in penetrating "agricultural dust," John J. ("Curly") Byrne of Sidney station, treats resistant larvae to a good dose of annihilating poison.

SAW-FLY DEPREDATIONS in a plantation of young pines. The tree in the background has been almost completely stripped of needles. Larvae have begun to work on the pine to the right. On the left are trees so far unassailed.

RECURRENCES OF saw-fly infestations must be anticipated even after a plantation has been sprayed. Here, Eric Roberts, chief operating engineer of the Sidney Hydro power plant, has discovered a new infestation—and there are likely more. "Mopping up" operations will be carried out immediately.

By Harry M. Blake

Hydro News

"Well, here we are," announced Eric Roberts, chief operator of Hydro's Sidney generating station, as we stepped out of the car. "The trees we are spraying now are in beyond that clump of sumach."

A carpet of green ran back fifty yards or more from the edge of the road. From a distance we had taken it for grass. But it wasn't grass. It was poison ivy, thick and menacing. A better guard against trespassers could not have been devised.

"Follow the leader," directed Mr. Roberts. "John knows all the secret passages. You'll miss most of it that way."

John J. Byrne was the station's sprayer. With a grin, he slung his apparatus over his shoulder and started off. We followed—the photographer and myself—frequently slipping off the twisting, hummocky path into patches of venomous-looking leaves.

We snaked our way towards the sumach. The sun was burning in a copper sky. When we got out of the ivy we

could feel the beads of perspiration on our foreheads. But we experienced no smarting, no itching. We had escaped. Then we turned to the business on hand, described as Operation Saw-Fly.

Saw-fly A Destructive Insect

Destructive insects are among the worst enemies of our forests. Normally, the balance of Nature is preserved by birds, animals and even by other insects, which prey upon the noxious insects, and, by keeping down their numbers, prevent them from becoming a serious menace. When these and other natural controls are removed or diminished, the injurious insects are left to multiply more or less at will. Their depredations then spread on an alarming scale, so that man, himself is called upon to do something about it.

The pine-saw-fly is an old-timer in Can-



ada, although few patriotic entomologists are prepared to regard it as a native. Here as is so often the case in the insect world, the female of the species is more dangerous than the male. Mrs. Saw-Fly is not armed with a sting, nor does she carry the germs of malaria, yellow-fever or sleeping-sickness, but she has the distressing habit of laying her eggs in the needles of pine trees. When the eggs hatch out, the larvae begin to nibble at

the needles in their immediate vicinity, and when they have cleaned up on these, they spread their depredations to the rest of the tree. The leaves of trees are like little factories where the inorganic material received through the roots and transmitted through the sapwood is "processed" into digestible food. When, during the active period of growth, this food is cut off by the wholesale destruction of the leaves and needles, the tree withers and dies.

From time to time there had been light infestations of saw-fly at Sidney near Trenton and at Eugenia in the Georgian Bay district where the Commission had carried out considerable pine planting and reforestation. These were combatted by the ordinary methods of chemical control then in vogue. Last year, however, L. G. Dandeno, superintendent of Hydro's Eastern division, reported a very large increase in larval infestations at Sidney, and about the same time an "S.O.S." call was received from T. D. Berry, Hydro's superintendent at Eugenia. W. Ray Hunter, the Commission's forestry superintendent at Toronto, and his assistant, W. M. Grundy, immediately got into touch with Dominion and Provincial entomologists and, as a result of their consultations, the head of Hydro's operating department, decided that a trial should be made of the powerful new insecticide "D.D.T." An autogyro plane was engaged, and aerial spraying was carried out—twice at Eugenia and once at Sidney.

Results of Experiments

The experiments at Eugenia proved an almost unqualified success. Few larval infestations in the sprayed-over area were discovered this summer. However, it was decided to put in an "army of occupation" to keep down any that did remain and might contemplate further mischief. With the co-operation of A. B. Baird, entomologist in charge of the Dominion Parasite Laboratory at Belleville, a host of entomophagous parasites, with much the same relish for a crunchy grub saw-fly that the average healthy man entertains for a good steak, were liberated and given carte blanche to gormandize.

At Sidney, where lighter concentrations of D.D.T. were used than at Eugenia, many new infestations appeared this year. This proved one of two things. Either not enough D.D.T. had been used in the spraying or a new saw-fly invasion had drifted in from adjoining properties. After consultation with J. J. DeGyrse, chief of Forest Insect Investigations for the Dominion Government, and H. S. Fleming, the Dominion's Forests Insect Ranger, Hydro's forestry department decided upon a "mopping-up" campaign with a 3 per cent distribution of D.D.T. in a containing base of "agricultural dust." When Hydro News visited Sidney,

this was proving highly successful. If new infestations on any large scale appear at Sidney next year, they can be put down to new insects coming in from "abroad."

As a matter of fact, forest conservationists must always anticipate new invasions—sometimes of the same insect they are controlling in a given locality, sometimes of a totally different species. That is why they speak of the "control" of insect pests and not of their "extinction." This summer, for instance, with the pine saw-fly well in hand, another destructive insect made its appearance at Eugenia. This was the European spruce saw-fly, whose Canadian counterpart has already been too long with us. Spraying and parasitic methods now being employed against the pine fly are expected to be just as successful against this new pest.

"Mopping-Up" Job

In trees that looked all right to us, Byrne's practised eye picked up some half-hidden branch where the healthy lustre of the needles had faded. Then he would pull back a bough so that we could see the infestation. Just tiny, wriggling worms—but what havoc uncounted millions of them can play with a forest!

"That agricultural dust with its 3 per cent load of D.D.T. is certainly doing a fine job," pronounced Mr. Roberts, as the sprayman let loose with his "gun". "It's going to save a lot of trees."

He went on to say that the Commission had been planting and reforesting at Sidney for some time. From the top of a hill some distance away he suggested that the photographer and I could get a better idea of the acreage involved.

Between the pines and the top of the hill was a veritable jungle of dwarf sumachs, about the height of a man and growing close together. It looked like an impenetrable wall but to our agreeable surprise, the boughs bent easily enough to give us passage. The trouble came from the ground beneath our feet. Long, coarse grass, the colour of hay, covered each mound and hummock like a flattened mane, and it was as smooth as glass. City shoes without cleats were a decided disadvantage, and we went sprawling on our backs a couple of times before we reached the summit of the rise where we could view the 146 acres of Hydro property on both sides of the Trent River.

Operators Make Suggestions

The Sidney power plant was taken over by the Commission in 1916. The land acquired in its immediate vicinity was entirely unsuited to agriculture. There was only straggling bush on the place, interspersed with open, sandy patches; but the operators at the station have always had ideas. They have sent

in requests from time to time for red and jack pine seedlings, and, as a result, there is now a plantation which will be of considerable value to the Commission as the trees mature.

"That is how things have been happening on Hydro power sites all over Ontario," Mr. Hunter told us on our return to Toronto. "The Commission sends a man out to operate a plant and he immediately begins to take an interest in his surroundings. His suggestions are made from an intimate knowledge of local conditions and they are always considered by the Commission. Often they have a direct bearing on power production. Trees help to screen off debris from canals and forebays, and they provide against erosion of river banks. Good timber, too, is, of course, very useful for construction purposes. As the Commission's power sites and storage basins are scattered through some of the finest tourist and fishing country in Ontario, the reforestation of Hydro properties is also of value to the province both from a conservation and aesthetic point of view."

First Reforestation Job

The first big reforestation job undertaken directly by the forestry department of the Commission was carried out at Queenston in 1931-32. Along the banks of the power canal a strip 25 feet wide was planted with 90,000 trees—all conifers. Up to the time of the war, replanting and extensions totalled 105,478—a mixture of ever-greens and deciduous trees. In the immediate vicinity of the Queenston station itself, 16,300 trees were planted in 1936-37, while 5,275 were allotted to the environment of the older Toronto Power Company's station. In some cases seedlings were planted, in other cases, seeds. A very large allowance was, of course, always made in planting for casualties and thinning out. The appearance of DeCew Falls generating station will also be materially improved by the survivors of 4,500 trees of different species planted in 1937-38.

Survey at Barrett Chute

It is principally, however, in the Eastern Ontario and Georgian Bay divisions of the Hydro system and in the Northern Ontario Properties, which the Commission operates in trust for the provincial government, that acreages adapted to forest management and reforestation occur. Care of forested property in these districts will ensure to the Commission a supply of good timber for many construction purposes, while further planting to replace losses will provide for future contingencies.

A LOOK AT SUNNYBROOK

**By Grace J. Carter,
Hydro News**

It is more than supposition that patients at Sunnybrook Hospital will have a daily diet of well-prepared, tasty, nutritious meals, that is if the "last word" in modern electric kitchens is any criterion.

Hydro News recently had the privilege of seeing through the one wing which has been opened in this huge Department of Veterans' Affairs' institution, which comes under the capable direction of Dr. K. E. Hollis, hospital superintendent. Of special interest to Hydro News was the bright 96 by 74 foot kitchen which is replete with shiny, labour-saving electrical equipment and stainless steel appointments. With this equipment, it will be possible for the chef and his staff to pro-

vide approximately 5,000 meals a day.

Although on a large scale, the layout has been planned for efficiency and convenience, and in this modern electrically equipped section there are several roast ovens, bake ovens and pastry ovens; seven "walk-in" as well as five sets of six "reach-in" refrigerators, which are conveniently located in different sections of the kitchen. Then there are electric food choppers; a bread slicer, vegetable peeler; French fry unit; electrically operated conveyors for dish washing; meat slicers and grills. There is a separate fish room with its own refrigerator, and also a special diet kitchen which is a complete unit in itself. Then there are over thirty electrically-heated portable conveyors which can be plugged in almost anywhere in the building, permitting the meal to be served di-

rectly from the waggon, thus ensuring it being kept hot and inviting.

This department comes under the direction of Miss Lillian McAdam, head dietitian, and John Bond, head chef, who in turn have a large staff of undercooks and assistants. Incidentally, Mr. Bond is a veteran of both the First and Second World Wars, and is also well known for his culinary arts in many of the leading hotels and restaurants in Canada and the United States.

No Detail Overlooked

The visitor's first impression of Sunnybrook Hospital, which is located on a 400-acre site on the north-eastern outskirts of Toronto, is that of its immense size. The next impression is that those who

(Continued on page 18)



A SECTION of one of the sunrooms where the patients gather for a friendly chat or to read their favourite magazine and, at the same time, absorb their share of vitamin "D." When construction is completed there will be thirty-two of these sunrooms throughout the hospital.

BELOW IS shown an electrician operating the switch panel located on the stage of the auditorium, which is to be equipped for both movie and stage presentations.



HEAD CHEF, John Bond, (above) takes a good sized piece of beef out of the electric roast oven.



JUST IN time for a jam tart right out of the oven. When in full swing it is expected that Sunnybrook kitchen staff, with the aid of its modern electrical equipment, will provide approximately 100 meals a day.



IT GOES in there and comes out here, and the dishes are clean and ready for the next meal. These electric dish washers do a speedy and efficient job and also eliminate "dishpan" hands.



SERVING MEALS directly from one of the electrically-heated conveyors can be plugged in almost anywhere in the hospital, ensures the food kept hot and inviting.

INTERIM REPORT
ON
A PROPOSAL
TO
STANDARDIZE FREQUENCY
AT 60 CYCLES
FOR
THE SOUTHERN ONTARIO SYSTEM

NOVEMBER, 1946

CONTENTS



	Page
Historical Statement - - - - -	4
Advantages Claimed For Change To 60 Cycles - - -	4
Present Situation Calls For Decision - - - - -	5
Change-over Involves A Three-part Problem - - -	5
Looking Ahead - - - - -	6
Main Steps For Change-over Procedure - - - - -	6
Flexibility With Respect To Timing - - - - -	6
Cost Of Frequency Change-over - - - - -	6
Changing Equipment - - - - -	7
Possible Initial Programme - - - - -	7
Conclusion - - - - -	7

FOR some years the Commission has been interested in the possibility of adopting a standard frequency of 60 cycles for the Southern Ontario system and has been considering some of the problems associated with the conversion of the Niagara division from 25 to 60 cycles.

More recently, this question has received a great deal of public attention. Specific requests for information on the subject have been received from the Provincial Government, the Toronto Hydro-Electric System and the Ontario Municipal Electric Association.

The Commission's study to this date of the controlling factors of the problem is embodied in this interim report which it is hoped will be useful as a basis for discussion.

Historical

Before discussing the manner in which conversion of the Niagara division to 60 cycles might be carried out, it is desirable to deal briefly with the origin of 25 cycle frequency at Niagara Falls and to show why it has been perpetuated in the Niagara division of the Southern Ontario system.

When the Niagara Falls Power Company undertook its first major electrical power development at Niagara Falls, New York, in 1893, it recognized the importance of selecting a frequency which would be best suited to the requirements of its prospective customers and, with a view to obtaining the most competent advice on this question, engaged an international board of consulting engineers, among whom were Professor George Forbes of England, and Dr. Coleman Sellers and Professor Roland of Johns Hopkins University. Quite independently a study of the problem was made by the Westinghouse Company, which foresaw the difficulties in supplying with alternating current both lighting (for which higher frequencies were preferable), and power service (for which lower frequencies were at that time preferred).

The Niagara Falls Power Company's engineers reached the conclusion that a frequency of $16\frac{2}{3}$ cycles would be the most satisfactory, having regard to the performance of motors and rotary-converters as then known and designed. The Westinghouse Company engineers, on the other hand, reached the conclusion that 30 cycles would be the most satisfactory frequency for power use and 60 cycles for lighting and other small installations. Ultimately a compromise was reached, the Niagara Falls Power Company selecting a frequency of 25 cycles—a frequency at which the Westinghouse Company was prepared to supply and guarantee the electric generators.

In view of the comprehensive study then given to this problem, it may be said that the selection of 25 cycles by the Niagara Falls Power Company had a sound technical background, based on existing knowledge in the art of electrical engineering at that time. It was quite natural, therefore, that when the power developments at Niagara Falls, Ontario, were undertaken a few years later they should be developed at 25 cycles. The Canadian Niagara Power Company (in operation 1904) and the Ontario Power Company (in operation 1905) anticipated that the greater part of their output would be exported to the 25-cycle market in the State of New York, and the Electrical Development Company (in operation 1906) expected to transmit a large part of its output to Toronto, a distance of approximately 90 miles, which at that time was considered long distance transmission, for which the lower frequency was preferred.

In the intervening years between the construction of the Niagara Falls Power Company's first development (in operation 1896) and the initial operations of Hydro in 1910, advances in the art of electrical engineering overcame some of the initial obstacles in electric power applications but not to the point of materially affecting the relative status of the two frequencies. Having regard to the large amount of low price, 25-cycle power, which was already available at Niagara Falls, and the recognized advantages of low frequency for long distance transmission, it is believed that the decisions the Commission then made, to purchase blocks of 25-cycle power and later to purchase the generating plants, were well founded.

It is well also to remember that upon the basis of 25-cycle power being available in large amounts and at low cost, the Hydro enterprise rapidly attained an advantageous position. It built up an industrial centre second to none in Canada, and has continuously been several years ahead in the low cost of its residential and commercial service and in the use made of electricity by the citizens of Ontario.

Considering that the construction of the Queenston plant was undertaken when the world war of 1914-1918 was in progress and when demands on manufacturing facilities and finance were at a maximum, and having regard to the distances to which power would have to be transmitted, the Commission decided not to depart from the frequency of 25 cycles which had already been so well established.

In 1926 when the eastern power contracts were negotiated the question of frequency again received consideration. Transmission of this power to the eastern limits of the Niagara system involved distances of approximately 230 miles in the case of Gatineau and nearly 300 miles in the case of Beauharnois. The transmission of large blocks of power over such long distances and at the voltage selected, 220,000 volts, was in the nature of a pioneer undertaking and again 25-cycle frequency was considered to have certain advantages for the Commission's operations.

The growth in load and changed conditions resulting from technical developments since that time have made it necessary again to review the situation to determine whether a change from 25 to 60 cycles in the Niagara division is desirable and practicable.

Advantages Claimed For Change To 60 Cycles

Some of the outstanding points in favour of the changeover are as follows:

(a) Improvement in the art of power transmission and the use of synchronous condensers for voltage regulation have enabled utilities to transmit 60-cycle power economically in quantity over long distances. While voltage regulation and system stability problems are more severe at 60 cycles, previously placing this frequency at some disadvantage in the matter of transmission and distribution, this disadvantage is at least partly compensated for by the fact that voltage regulating devices (synchronous condensers and static capacitors) are less expensive at the higher frequency.

(b) Sixty cycles has become the standard of frequency for the North American continent and utilities both in the United States and Canada that previously used frequencies other than 60 cycles have largely changed to the 60-cycle standard, except in certain special cases such as heavy electro-chemical, electro-metallurgical and steel mill loads. The

adoption of 60 cycles as the standard frequency in Southern Ontario would permit the free interconnection of the Commission's systems with those of adjoining utilities in which this frequency is already accepted, with the consequent more efficient and more flexible utilization of the power resources.

(c) The Niagara division is in the process of being isolated into an island of 25-cycle power with attendant disadvantages such as a narrow purchasing market which will not permit the development, in the 25-cycle field, of the benefits of mass production now attained in the 60-cycle equipment field. Thus, as time goes on, Canadians in the 25-cycle territory will be placed in an increasingly disadvantageous position with regard to obtaining newly-developed appliances manufactured by mass production methods.

(d) Modern 60-cycle lighting equipment is more satisfactory and more economical for factory, office, commercial and home use, particularly in the newer developments of fluorescent and other gaseous discharge type lamps. The same factor applies in the newer developments in radio, in the industrial applications involving electronics and a wide variety of new control devices.

(e) Manufacturers coming to Ontario to establish plants find it necessary to do one of three things: redesign their equipment for 25-cycle operation; install frequency changers; or establish their plants in 60-cycle territory.

(f) Consumers moving from 25 to 60-cycle territory or vice versa are put to expense and inconvenience due to the difference in frequency prevailing in Ontario but in none of the other provinces of Canada.

As against these various items in favour of 60 cycles, there is, of course, the cost of making the changeover.

Present Situation Demands Decision For Or Against Change

The Commission is now faced with the need of providing, from new generating sources, large amounts of additional power to meet the future requirements of Southern Ontario. A decision therefore must be made as to whether these new power supplies are to be developed at 25 or 60 cycles.

The question at this time is whether the present and future advantages of 60-cycle power are sufficiently great to warrant the expense involved in the changeover of a very large 25-cycle system to a 60-cycle system.

What Would Changeover Involve? A Three-Part Problem

The changeover problem consists essentially of three parts:

1. The supply of 60-cycle power by the Commission to the municipality;
2. The supply of 60-cycle power by the municipality to the consumer;
3. The changeover of the consumers' 25-cycle equipment.

These three problems need to be considered from the technical standpoint and from the standpoint of cost.

1. The problem of the supply of 60-cycle power in the 25-cycle area is not difficult technically and would present no serious economic problem, provided it could be accomplished stage by stage in accordance with a planned programme.

In converting existing 25-cycle generating stations little change would be required in the hydraulic turbines and associated equipment. However, the generators and much of their associated equipment would require complete rebuilding.

The main step-up and step-down transformation probably could be reconnected, in some cases at very small expense. The major 220,000-volt transmission circuits from eastern sources (when the time came to convert them) would need to be augmented for 60-cycle service by the addition of one, perhaps two, new circuits. Synchronous condensers would have to be rebuilt and certain additional units would be required.

2. The problem of the supply of 60-cycle power by the municipality to the consumer likewise is not difficult technically, but economically it is more difficult to appraise because each municipality is an individual problem.

Within the municipal systems, step-down transformers would have to be reconnected or rewound, or in some cases replaced. The distribution facilities would have to be revised to provide generally smaller areas of distribution (lower capacity feeders) to compensate for the increased voltage regulation at the higher frequency. However, remedial measures might be adopted, such as the use of static capacitors or feeder voltage regulators, by which the construction of new distribution facilities could be held to a minimum.

With the exception of the older equipment, pole-type transformers could be used generally without any change. Meters could be rebuilt for 60 cycles.

3. The changeover of the consumers' 25-cycle equipment again offers no insurmountable technical problems but from the economic standpoint it presents the most perplexing problem. It can be considered in three aspects relating respectively to domestic, commercial and industrial consumers.

(a) Within domestic consumers' premises frequency conversion would require that most motor-driven equipment be rebuilt. Lighting and heating equipment would require little attention except where time-control elements exist, as for example on the more expensive electric ranges. Motors would require replacement on the larger motor-driven appliances and also on electric clocks, though most of the smaller fractional horsepower motors are universal or can be adjusted for 60-cycle service. From a cost point of view, the refrigerator would involve the most expensive adjustment. In the case of the washing machine a change of motor would be needed, but where the mechanism is driven by a belt from the motor the change is a relatively simple one to make. Motors for workshops, water pumps, farm equipment, furnace blowers, oil burners, etc., would have to be changed to 60-cycle equipment.

(b) The same general conditions would affect the commercial consumer, except that fluorescent lighting would require special attention. The degree and manner in which the commercial consumer would be affected would vary with the relative importance to him of his lighting, heating and motor-driven equipment. These in turn would vary with the character of the business—merchandising, restaurant, office building, etc.

(c) In the industrial field the change would be more complicated and problems would vary with the type of enterprise. In simple cases, motors and their controls would be replaced either with new or rewound equipment. It is anticipated that a certain proportion of the motors could be satisfactorily rewound for 60-cycle service. In more complex cases, revisions would be required in motor mountings, drives or gearing, and in the control equipment. The cost of changeover would be relatively high in modern factories using a multiplicity of individual motor drives and the problem would

be more difficult where definite speeds are a prime factor in the operation of the equipment. In difficult cases there would, of course, be the possibility of obtaining the advantages of 60-cycle service for lighting, etc., and of using for a few years frequency-changers for a proportion of the motor load. Mobile frequency-changers in various capacities would no doubt be an important technical tool in the changeover technique.

Looking Ahead

With reference to the foregoing three-part problems and before considering the programme for the main steps in changeover procedure, the following points should be kept in mind:

1. As time goes on the benefits to be derived from a change to 60 cycles will be augmented rather than lessened due to advances in the art of electricity utilization which will lead to an increase in the number of appliances and devices placed on the market for use at 60 cycles.

2. It is considered unsafe to assume that advancements in technique will in any way reduce the cost of the changeover or in any way reduce the ultimate necessity for it.

3. The cost of making a conversion will not decrease but on the contrary will undoubtedly increase with each passing year. Such increase will be occasioned, not only by the progressively greater number of consumers that will need to be converted, but by the constantly increasing cost of converting each individual consumer as the fields of application of electrical energy expand. Consider the domestic consumer, for example; the Commission estimates that it would have cost an average of \$48.90 to convert each domestic consumer under conditions prevailing in 1944. This figure may be compared to the Commission's estimate of \$75.75, which is the figure it is estimated will apply in Ontario in 1950, under the labour and material conditions which it is assumed will then prevail.

In this connection it may be pointed out that when Great Britain delayed its programme of frequency standardization it was found that the cost of changeover increased year by year, as new load developed at non-standard frequencies, until final costs, when the change was eventually completed, were many times initial estimates.

Main Steps For Changeover Procedure

The main steps of the procedure entailed in the changeover can be enumerated as follows:

- (1) A logical, economic plan would be developed for the initial steps in a more comprehensive programme, selecting those areas most conveniently situated to receive 60-cycle service.

- (2) In these areas an interim programme would be developed, within the limitations of the flexibility existing among the presently available generating resources, pending the completion of new 60-cycle generating stations.

- (3) All new generating stations would be designed and constructed for 60-cycle service and as these new sources became available the conversion programme would be expanded, releasing existing 25-cycle capacity to take care, temporarily, of growth in the 25-cycle areas.

- (4) As the conversion programme proceeded and more 25-cycle capacity was released, the generating equipment would be changed to 60-cycle and further 25-cycle areas converted. This would continue to a point where the remaining 25-cycle

equipment provided capacity sufficient for those industrial loads retaining 25-cycle service, with reasonable provision for service security and growth.

Flexibility With Respect To Timing

Before presenting the overall costs of a complete frequency changeover it is necessary to emphasize the desirability of ensuring flexibility in any programme considered. Technically and economically such flexibility can be arranged within the general programme of conversion.

Apart from the question of costs, economic aspects involve the consideration that frequency changeover is a project that will use many millions of man-hours of labour. This may be beneficial or the reverse, depending upon the timing of the programme. It would not be beneficial if competition for skilled labour made such labour less available for the completion of more important social services. It might on the other hand be very beneficial if, being started, it could be speeded up should economic depression or widespread unemployment threaten.

We may further note that the programme does not contemplate that all consumers would be changed to 60 cycles, as 25 cycles is still preferred for large slow-speed motor applications, for certain arc furnace applications and for heavy electric traction. Some 350,000 kw of this type of load is to be found in the heavy industries in the Niagara district and the steel mills in Hamilton, which could readily be supplied from existing Niagara River generating plants.

Costs of Frequency Changeover

The figures presented in the following table include the estimated cost of rebuilding existing generating equipment (exclusive of the 350,000 kw in the Niagara River plants retained at 25 cycles to supply heavy industry in the Niagara Peninsula), the provision of the necessary additional transmission and distribution facilities from the generating sources to the ultimate consumers and the conversion of consumer equipment—all estimated on a conversion period of fifteen years:

Changeover Cost for	Basis 15 years
1. Generating and transmission equipment.....	\$ 47,412,000
2. Municipality-owned distribution	35,300,000
3. Rural distribution	4,400,000
4. Domestic consumers	46,000,000
5. All consumer load other than domestic	62,200,000
Total Cost	\$195,312,000

The Commission has also estimated the cost of conversion on a twenty-year changeover basis. The cost remains substantially the same for the first item in the above table but is increased somewhat for the remaining items. The estimated increase in cost should a twenty-year period be preferred to a fifteen-year period amounts to a sum of about \$9,000,000.

While it is evident that very large sums of money are necessary for the complete programme of conversion, it should be remembered that the expenditures would be made over a period of years and integrated into the existing cost of structure. Also, it is anticipated that a certain proportion of the expenditures could be written off against existing reserves, thus reducing the effect upon the cost of power.

It may also be stated that it is estimated that over 95 per cent of the total money expended for the changeover

would be spent in the Province of Ontario for labour and equipment.

Financing The Cost of Changeover

After a study of different methods of meeting the costs of the project it was decided not to present any detailed methods before discussion with all parties concerned.

However, it is believed that the financing of the total project can be so arranged over a period of years (20 years is suggested) that there need not be any new debentures issued by the Commission specifically for this purpose. This could be made possible by the use of existing reserves, augmented by certain charges in the cost of power.

It is difficult to estimate accurately the effect upon the present rate structure of a complete changeover such as is outlined in this report, because of the many variable factors and the extended time period involved. However, the plans considered by the Commission would permit of such a programme being executed and financed so as not to increase the wholesale power rates to municipalities under normal conditions more than 5 per cent on the average over 1945 rates.

The Work Of Changing Equipment

The cost of changing consumers' equipment from 25-cycle to 60-cycle operation in homes, farms, commercial establishments, industry, etc., will largely depend upon the efficiency of organization. To keep such changeover costs to a minimum the Commission would require a special engineering organization, including field and shop crews, which could make conversions in predetermined areas with dispatch and at minimum cost. With such an organization it would be possible to salvage the maximum of material and equipment and by careful preparation and teamwork it should also be possible to reduce to a minimum the inconvenience to consumers entailed in changing their service and equipment.

The Commission would also be prepared, upon request, to undertake the engineering and/or the actual construction work of changing the distribution systems within municipalities where the normal staff complement is insufficient to handle the changeover.

Possible Initial Programme

A possible initial changeover programme is one based upon the assumption that all future generation will be installed at 60 cycles, that new 60-cycle power will be provided as quickly as possible, and that sufficient load will be changed over from 25 to 60-cycle operation to enable new 60-cycle power to be absorbed under some practical basis of distribution.

Such a programme could be undertaken without committing the Commission at this date to any rigid time schedule for the complete changeover in the Southern Ontario system of all 25-cycle power (other than that to be reserved for the 25-cycle industrial loads in the Niagara Peninsula—350,000 kw).

A decision to discontinue the installation of new 25-cycle generating capacity in Southern Ontario would require that the Des Joachims development be constructed for 60-cycle service and a programme of conversion initiated by which the system load growth could be supplied from facilities originating at that point. However, this would not mean that new loads, wherever they appear in the system, would be supplied at 60 cycles, for although it would be desirable to supply all

new consumers at the higher frequency and thus avoid incurring the cost of later conversion of these new consumers, to do so would result in an uneconomic duplication of transmission and distribution facilities.

This programme would require the initial conversion of the equivalent of one year's load growth, which, in the 25-cycle Niagara division, is estimated to be 37,000 kw (50,000 hp). In the succeeding years the conversion of the annual load growth in the remaining 25-cycle area would be required.

The effect of such a programme on the Commission, the municipalities and the consumers may be briefly summarized as follows:

The Commission would install new generating capacity at 60 cycles, with new 60-cycle high-voltage transmission and main transformation at receiving terminals. Additional transmission facilities would be required at 60 cycles, but this would be offset to some extent by the saving in step-up and step-down transformation cost. By combining existing sub-transmission lines with certain new construction 60-cycle power could be made available within a selected area at the points of delivery to the municipalities involved.

The initial programme of conversion could be devised in almost an infinite variety, depending on the area selected for a progressive changeover. Detailed study has been completed for one such programme, that considered to be most economical and most convenient from a technical viewpoint, and for this programme the total cost, up to the time when the Des Joachims development is fully loaded, has been estimated at \$45,000,000.

It should be noted here that this figure includes all costs incidental to frequency conversion from generator to consumer, but does not include those expenditures normally required to maintain supply at 25 cycles. It is based on conditions estimated to exist in the year 1950; in other words, material and labour costs and the amount of equipment concerned are estimated as being those likely to apply in that year.

The costs of consumer conversion used in the above estimate relating to the initial step are based on the following average estimated costs per consumer as of the year 1950:

Domestic consumers	-----	\$75.75 per consumer
Commercial consumers	-----	127.80 per consumer
Rural consumers	-----	75.40 per consumer
Industrial consumers	-----	36.00 per connected hp.

Conclusion

Considerable study has been made of the engineering and economic aspects of the proposal to adopt a standard frequency of 60 cycles for the Southern Ontario system. There are no insurmountable engineering difficulties involved and there would be marked advantages in having a standard frequency of 60 cycles.

The problem is whether the present and future advantages of 60-cycle power are sufficiently great to warrant the expense involved in the changeover of a very large 25-cycle system, today totalling 1,000,000 kw of generating capacity (excluding 350,000 kw to be retained for 25-cycle industrial operation).

The Commission believes that the proposal is entirely practicable from a technical viewpoint and has prepared this interim report as a basis for consideration and discussion of the technical and other aspects of the problem by all parties concerned.

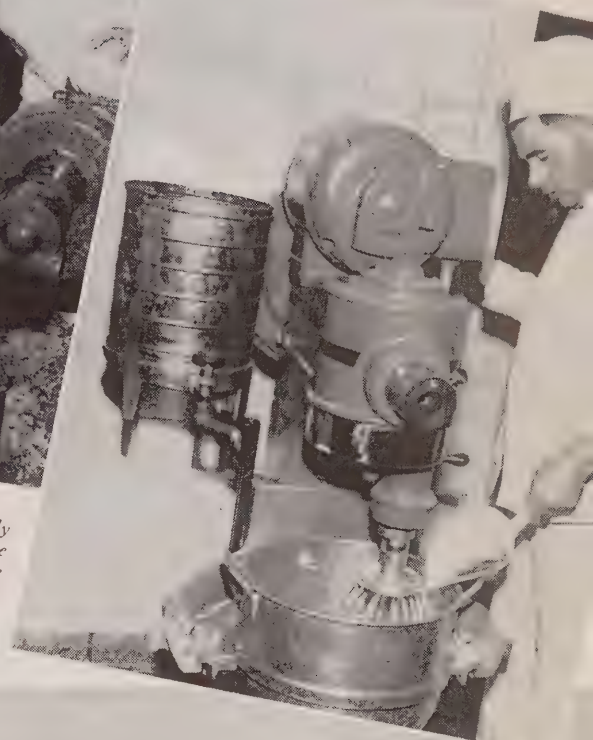


CHIEF DIETITIAN Lillian McAdam and head chef John Bond engaged in a "meaty" discussion. In this section there are five sets of six "reach-in" and seven "walk-in" electric refrigerators.



SINCE FRESH salads are on the daily menu, the above electric vegetable slicer and food chopper cuts up the raw vegetables, such as cabbage, in record time.

THE PASTRY chef (below) whips up a spice cake in the electric cake mixer.



ANOTHER IMPORTANT feature of this up-to-date kitchen, with stainless steel appointments, is this electric bread slicer which cuts at the rate of approximately two loaves a minute.



THIS ILLUSTRATION shows one of the attractive wards equipped with cream coloured steel Gatch beds, overbeds, side tables and night lights. The walls are painted green, and there are harmonizing window drapes.

A LOOK AT SUNNYBROOK

(Continued from page 15)

have been responsible for the planning have apparently overlooked no detail that will contribute to the comfort and happiness of the patients and, at the same time, make this hospital one of the finest of its kind on this continent. When completed, Sunnybrook will have accommodation for 1,450 beds, together with the most modern equipment available to medical science, including the finest electrical facilities.

The wards themselves are painted a light green with harmonizing drapes and pale green bedspreads on the cream coloured steel beds, giving an over-all pleasant homey atmosphere. Each patient has a Gatch bed with overbed and side tables, night lights, emergency lighting in the ceiling, and, of course, the patient's call system to nurses' stations in the corridors is within easy reach. All wards and corridors throughout the hospital have acoustical treatment on the ceiling to help eliminate disturbing noises.

One Block In Use

At present the only block in use is the neuropsychiatric wing, where there are about 170 patients. However, when the main hospital and auxiliary buildings are completed, there will be a limb and surgical appliance building, laundry, gymnasium, swimming pool, chapel and pulmonary building. When completed, the staff residence will house 250 orderlies and maids, and the nurses' residence will accommodate 300 nurses. There will be a billiard room, bowling alley, bowling

green and tennis courts. The games and writing rooms will have appropriate murals on the walls.

Auditorium Can Seat 800

The auditorium, with a seating capacity of approximately 800, is to be fully equipped for both movie and stage presentations. The lighting, both direct and indirect, can be controlled from the projection room and stage. Although all buildings will be of fireproof construction, fire fighting equipment is being installed to meet any emergencies. In addition to the fire alarm stations and equipment which will be found on each of the six floors, hydrants will be spaced around the grounds with hose stations every 500 feet. When construction is completed, there will be thirty-two sunrooms throughout the hospital, and every building will have a visitors' room on each floor.

A public address system is now being installed with fixed speakers in all public rooms, and portable speakers that can be plugged in to reach any or all wards. Through this system, broadcasts can be made from the main foyer, auditorium and chapel. In the nurses' stations there are the customary call systems, telautographs, sterilizers, narcotic safes and key cabinets.

It is expected that when Sunnybrook Hospital is in full swing many new electrical devices will be utilized in the alleviation of suffering. One of the rather unique devices now being used in the treatment of brain and head injuries is the electro-encephalograph which picks up

ENDOW HYDRO ROOM

A letter acknowledging receipt of \$350 to be used for endowing a room at Sunnybrook Hospital was received recently from the Hon. W. J. Stewart, chairman, hospital committee, by the Ontario Hydro-Electric Club.

In his letter he wrote: "Will you please accept and convey to your Association, the appreciation of the committee of which I have the honour to be chairman, and also on behalf of those who will benefit from your very fine contribution."

the electrical brain potentials and records them on paper. The full benefits of this instrument can only be obtained when used in a specially designed room which is lined with copper.

Electricity Plays Vital Role

It is the proud boast of this D.V.A. institution that the majority of its employees are veterans. In fact only veterans are taken on the permanent staff. Of course it is understood that only returned men are taken as patients in this hospital.

As in the past, electricity will continue to play a major role in bringing these men back to health and happiness and in helping them to take their rightful places in a world in which they hope, the need will not arise again for the building of Sunnybrook hospitals.



AN OUTSIDE view of Sunnybrook Hospital, which is located on a 400-acre site on the northeastern outskirts of Toronto, and which, when completed, will have accommodation for 1,450 beds.



Hydro

HOME FORUM

by Edithemma Muir

HOME ECONOMIST

If dreams come true and we get a white Christmas build a snowman on the lawn and let him hold the birds' dinner. Give him two coals for eyes—if you can spare them. Small sticks make a nose and a pipe.

Duck makes a duck of a dinner too. Chicken is an appropriate highlight—and a roast of beef is an old English custom. Or Mary might cook a little lamb. What's your favourite entree for Christmas dinner?

Since you'll have bouillon to simmer for an appetizer, gravy to make for the meat, sauce for the pudding and a big kettle of water for tea, then oven-brown the potatoes and steam cubed turnips. Tuck potatoes around the meat one hour before meat will be cooked.

To freshen the rolls for the special occasion, we suggest adding a dash of spice to milk, sprinkle on rolls in a paper bag and heat in moderate oven.

The dessert may be mincemeat pie since we always want something made of a food short in supply. A fancy open-face kind will save some pastry for a few tarts.

Lemon sauce for the steam pudding will quench a heavy aromatic dish. Mix and bring to a boil 2 tbsps. flour, 2 tbsps. lemon rind with 2/3 cup sugar and 2 cups water. Boil 5 mins. Remove from element and add 4 tbsps. lemon juice and 3 tbsps. butter. Keep hot until ready to serve.

Coffee with cream, or dark as midnight, makes the proper landfall after your gastronomic flight.

Christmas is a time for painting the town red—bows on the door, electric light fixtures in the window, brilliant fixings on the table or the mantle and other places.

FRUITED CRANBERRY MOULD

1 cup sugar
1 cup water
2 cups cranberries
1 envelope gelatine
1/2 orange juice
1 cup orange sections
1/2 cup sliced canned pears

Combine sugar, water and cranberries; cook on electric element turned Low for 10 mins. Soften gelatine in orange juice and dissolve in hot fruit mixture. Chill until syrupy, then fold in orange sections and sliced pears. Pour into attractive shaped mould which has been rinsed out in cold water. Chill in electric refrigerator until set. Unmould and garnish with orange sections and tiny balls of turkey dressing.

* * *

Note: Bake some moist poultry stuffing in a small covered custard cup. Take out by spoonfuls when partially cool and roll in balls in chopped parsley.

As a wind-up for a Christmas Eve party, pop corn at fireplace, quaff sweet cider, sing songs and wait for Santa Claus.

Especially delicious with oranges and grapefruit is red jelly dressing for the Sunday Salad. Beat 1/2 cup tart, red jelly with fork until smooth. Add 1/4 cup salad oil, 2 tbsps. vinegar, 1/4 tsp. salt. Continue beating until smooth. Makes 1 cup.

There's racy zest, sparkling colour, and a firm not-too-smooth texture in our new

recipe for Tomato Aspic. Here it is: Combine 4 cups tomatoes, 1/3 cup chopped onion, 1/4 cup chopped celery, 1 bay leaf, 2 whole cloves, 1 tsp. salt, 1 tbsp. sugar. Simmer 20 mins.; strain. There should be 3 1/2 cups. Soften 2 envelopes gelatine in 1/4 cup cold water then dissolve in hot tomato mixture. Add 2 tbsps. lemon juice. Pour into oiled mould; chill in electric refrigerator. Unmould on lettuce. Serves 6 to 8.

Could it be that if men enjoyed their executive position as Holiday Host, the carving of fowl at the table would be done peacefully. And if he should have the right tools—a sturdy fork and a sharp knife.

Every time you drop a card in the mailbox you set in motion the largest non-profit business enterprise in the world. It receives, transports and delivers over a billion letters and packages yearly. An Englishman, Sir Rowland Hill, is really the father of modern postal practice. In 1837 he published a pamphlet urging the British Government to adopt a uniform one-penny rate of postage. This put private companies who had been charging exorbitant rates out of business. Hill also invented paper tokens with glutinous wash on the back.

Thousands of letters detour through the Dead Letter Office because of undecipherable addresses—not only illegible writing, but mis-spelled addresses. For example, one postal clerk listed 197 different spellings of Chicago—from Zizabow to Chaque-chico. There are available, at a small sum, both official town postal guides, and national postal guides. Would it not be better to be sure your Christmas greeting is delivered, and then too consider the job of the distraught postal clerks.

However, there is really a special thought in the message on every Christmas card. I would like to send one to each of you, and on it the thought would be, a very happy Christmas to you.

700 YEARS OF HYDRO SERVICE IS RECORD OF 29 EMPLOYEES

Feted At Banquet In General Brock Hotel, Niagara Falls—Presentations Made By John Dibblee—Plan Annual "Get-Togethers" To Maintain Contact With One Another.

Two significant events were chronicled in the Niagara district on December 2, when a group of engineers met in Buffalo, New York, to celebrate the 50th anniversary of power generation on the Niagara River and over on the Canadian side, in the General Brock Hotel, 29 men with a combined record of over 700 years of Hydro service were feted at a banquet by their fellow employees of The Hydro Electric Power Commission of Ontario.

These men, who were retiring from Hydro, were presented with wallets by John Dibblee, chief engineer in charge of operations, on behalf of their fellow employees who have decided to make this the first of annual "get-togethers" so that they may maintain contact with each other.

In reply to a toast to the Commission,

Mr. Dibblee pointed out that Hydro had pioneered collective bargaining between Hydro employees and the Commission and that this had "paid off" in mutual understanding and had proved satisfactory as the basis for happy operation.

The evening got off to a good start when Charles Henry Sheppard, assistant district chief operator for Niagara Falls, was greeted with "Happy Birthday, Dear Charlie". For those who are not acquainted with Mr. Sheppard, it should be mentioned that he was an operator at Berlin, Ontario (now Kitchener) and when Sir James Pliny Whitney, premier of Ontario, took Sir Adam Beck's finger and pressed the bell, it was Charlie who actually threw the switch and brought the first power into Berlin.

Those men who have retired are William L. Ainlay who has a service record

of 37 years and 7 months; Ellwood Armbrust, 26 years, 5 months; Harold L. Bucke, 33 years, 6 months; Fred W. Dalmer, 26 years; Herbert Edwards, 29 years; Alfred Fortier, 28 years; John C. Gray, 25 years; David C. Herbold, 28 years; John Higgins, 29 years; James Jenkinson, 28 years; Hugh F. Kerr, 28 years; Roy E. Kreamer, 29 years; Alexander Love, 26 years; William Maslen, 26 years; Lui Mutnek, 29 years; Ernest C. Owen, 26 years; James Pringle, 24 years; William Smeaton, 26 years; George A. Thompson, 26 years; Stanley E. Thompson, 26 years; William Ewart, 26 years; Albert Austin, 3 years; A. Cecil Banham, 22 years; Paul Cote, 25 years; Arthur Kitchen, 4 years; John J. McCann, 29 years; William Schnitzer, 5 years; John Tooke, 20 years and William Stafford, 2 years.



THERE is usually lots of action when food appears on any banquet table and the recent event at the General Brock Hotel, Niagara Falls, was no exception. The occasion was a dinner in honour of 29 Commission employees upon their retirement from Hydro service. Just before the boys went into action the Hydro News' cameraman got the above picture.



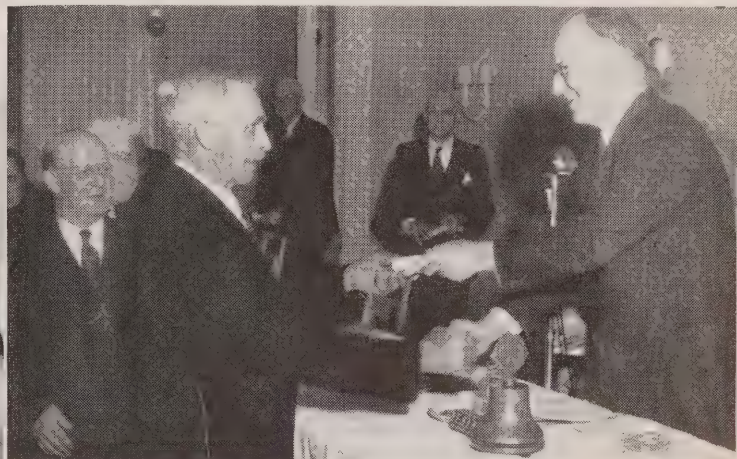
HAROLD L. BUCKE (left) and William L. Ainlay of the Niagara district, who have a combined record of seventy years of Hydro service and who are now retiring.



H. J. Muchleman, head of the Commission's operating department (left) chats with his two friends, Stanley E. Thomson who has retired after 26 years with Hydro, and J. S. Lotimer, superintendent, Niagara division. The two are discussing the wallet which was presented to Mr. Thomson.



CHARLES HENRY SHEPPARD, assistant district chief operator at Niagara Falls, had the pleasant duty of escorting the ladies of the local Hydro staffs to the banquet at the General Brock Hotel. Judging by their expression, they were as happy about it as he was.



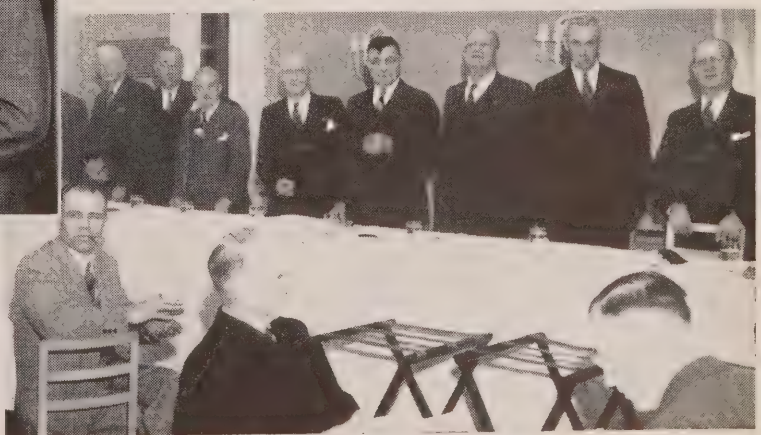
JOHN HIGGINS, who retires after 29 years service with Hydro, receives a presentation from John Dibblee, chief engineer, operations, The Hydro-Electric Power Commission of Ontario.



THOSE RETIRING from Hydro service included this group: William Maslen, Lui Mutnek, Ernest C. Owen, James Pringle, William Smeaton, Stanley E. Thomson and George A. Thompson.



AND HERE are the members of the arrangements committee. They are (from left to right): Frank E. Cooper, chairman; C. S. Stuckey, C. H. Sheppard and Frank H. Byrne. On the right, at the head table, are: James Jenkinson, John H. Higgins, David G. Herbold, John C. Gray and Ellwood Armbrust.



DOWN THROUGH THE YEARS

ELECTRICAL HISTORY PART 9

By Herbert C. Powell

In this, the last in the present series of articles, let us learn something about the technical details of work, power, energy, measurement units, and standards.

Power has been supplied by animals, human beings, falling water, water wheel, water turbine, steam engine, steam turbine, gas engine, gas turbine, gasoline engine, diesel engine, wind power, tidal power, jet engines and atomic power. All of those sources of power have been used to make electric power, because the electric generator must have a prime mover.

Work is done when a force moves something through a distance. Work done = force \times length moved. The units of work are: foot-pound; joule (large); erg (small). 1 joule = 10,000,000 ergs.

Power is rate of doing work; work \times time. The units of power are: horsepower; watt.

1 horsepower (H.P.) = 33,000 foot-pounds in 1 minute.

1 watt = 1 joule per second.

1 horsepower = 746 watts.

Energy is the ability to do work, and may be one of two kinds: (1) potential energy—energy in position, stored up, ready; (2) kinetic energy—energy in motion. Energy can neither be created nor destroyed, but may be changed from one form to another.

The name "erg" is derived from the Greek word "ergon", meaning work. It is a term that was given to the expression "dyne-centimeter", which is a force of 1 dyne moving through a distance of 1 centimeter.

The name "joule" was adopted as the unit of work or energy in 1889 by the International Electrical Congress in Paris at the same time as the name "watt" was adopted as the unit of power.

Joule is the name of James Prescott Joule, (1818-89) an English scientist, who in 1843 made the great discovery of the mechanical equivalent of heat.

Watt Developed Steam Engine

"Watt" is the name of James Watt, (1736-1819) a Scottish engineer, who developed the steam engine which he patented in 1769, and in 1775 the patent was extended to 1800. In 1774 he formed a

partnership—Boulton and Watt, with Matthew Boulton, a mechanic. They manufactured steam engines first to pump water out of mines, then the engines were used in many industries, also for steamships and locomotives. James Watt was born in Greenock in 1736, and in 1754 went to Glasgow. After learning to make mathematical instruments, he became the instrument maker at the University of Glasgow. He also acted as engineer for the city waterworks, and as surveyor of canals. He lived till 1819, age 83, to see his improved engines greatly used.

The name "horsepower" was used by James Watt to represent the size of his engines. The engine was to replace the horse, but he wanted his engines to look as though they would do far more work than horses. Therefore in his study of how much work that heavy dray horses could do, he found the horse could pull a certain number of pounds a certain number of feet in a certain number of minutes. He finally decided to use 33,000 foot-pounds per minute as the unit of horsepower, by which he was assured that his 10 horsepower engine would do far more work than 10 horses.

Measurement units are divided broadly into two systems: (1) metric system; (2) all other systems.

In 1793, just four years after the start of the French Revolution, a committee of scientists and engineers was appointed by the new French Republic to develop a decimal system of weights and measures. They developed the metric system based on the meter which is a unit of length equal to the 10,000,000th part of the distance from the north pole to the equator at the meridian through Paris.

In 1840 France adopted the metric system; Germany in 1872; Austria in 1876, and later in almost all other countries of the world except United States, Great Britain, Canada, and British possessions. Nearly all scientists in all countries use the metric system.

First Two Units

The history of electrical units dates from 1861 when the British Association for Advancement of Science began their work on electrical units and standards. The first two units were called ohm and volt in honour of George Simon Ohm (1787-1854), German scientist, and of Alessandro Volta (1745-1827), Italian

scientist. The ohm is the unit of resistance to the flow of electricity. The volt is the unit of electromotive force, pressure or difference of potential between two points of a conductor.

In 1865 a standard of resistance, called the BA ohm, was adopted. It was named after the British Association.

In 1872 the Clark Standard Cell of zinc-mercury became the standard for electrical measurement.

In 1882 the "legal" ohm in place of the BA ohm was adopted by the International Electrical Commission in Paris. In 1893 the international ohm was adopted by the International Electrical Congress in Chicago, at the same time as the adoption of the international volt and international ampere. In 1908 an International Commission in London decided on the sequence of units: first unit, ohm; second unit, ampere; third unit, volt, which is to be determined from the ohm and ampere.

In 1881, the name "ampere", in honour of Andre Marie Ampere (1775-1836), French scientist, was adopted as the unit of intensity of current flow of electricity, by the International Electrical Congress in Paris.

In 1911, the International Electrical Congress at Turin, Italy, accepted the Weston cell (Edward Weston, 1850-1936) as the standard cell for national laboratories. The Congress also specified the equation for Ohm's law (discovered in 1826) by George Simon Ohm (1787-1854) as follows:

$I = E$ where

R

I = amperes, — intensity of current;

E = volts, — electromotive force or difference of potential;

R = ohms, — resistance of the circuit.

This formula may be expressed in two other forms:

$R = E$; $E = IR$

I

Unit of Power Adopted

In 1889 when the name "watt" was adopted as the unit of power, the relation to volt and ampere was expressed: 1 watt = 1 volt \times 1 ampere. A larger unit of power, kilowatt, uses the Greek prefix, kilo, which means 1000; 1 kilowatt (K.W.) = 1000 watts. Other terms

are used in reference to alternating currents, "volt-amperes", and "kilovolt-amperes" (K.V.A.). There is a definite relationship between horsepower and kilowatts, $1 \text{ HP} = .746 \text{ KW}$; $1 \text{ KW} = 1.34 \text{ HP}$.

The unit, kilowatt-hour, is used in measurement of electrical energy for billing purposes. These units are measured in an electric meter known as the watt-hour meter, and are totalled on the dials of the meter. This meter is used in nearly all metered electric services in the home, factory, and place of business. The first watt-hour meters were produced in 1888.

The unit, kilowatt, is used in measurement of demand of electrical power for billing purposes, and these units are measured by various types of maximum demand meters. Kilowatt-hours = Kilowatts \times hours.

Electrical and Magnetic Units Adopted

Other electrical and magnetic units have been adopted from time to time using names of scientists.

1881 Coulomb:—Charles Augustin de Coulomb (1736-1806), French scientist, who invented the torsion balance for measuring electrical attraction. The coulomb is the practical unit of quantity; the quantity of electricity which passes in one second when the current is one ampere.

1881 Farad:—Michael Faraday (1791-1867), English scientist, who discovered in 1831 magnetic-electric induction. The farad is the unit of electrical capacity, the capacity of a body (condenser) when a charge of one coulomb quantity of electricity raises its potential by one volt. The microfarad (one millionth of a farad) is a more suitable size.

1893 Henry: — Joseph Henry (1799-1878), American scientist, who developed the electromagnet in 1826, and in 1832 the principle of the telegraph relay. The henry is the practical unit of inductance, the self induction of a circuit in which the variation of a current at the rate of 1 ampere per second induces an electromotive force of 1 volt. The henry supersedes the name quadrant which had been adopted in 1889.

1900 Maxwell:—James Clerk Maxwell, (1831-79) Scottish scientist, who translated into mathematical laws the results and theories of Faraday, and also developed the electromagnetic theory of light in 1865, which theory was verified in 1888 by Hertz (1857-1894). The maxwell is the unit of magnetic flux which is the magnetic flow or current which passes through any magnetic circuit.

1900 Gauss: — Karl Friedrich Gauss

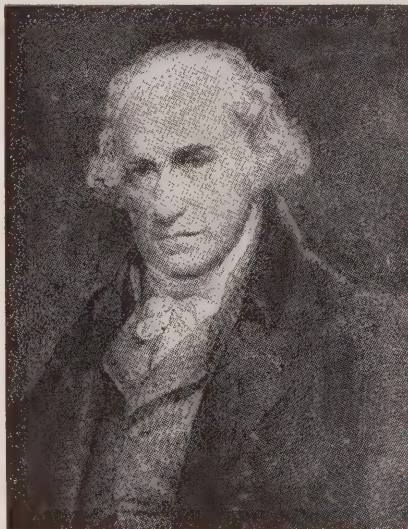
(1777-1855), German mathematician and astronomer, who, with Wilhelm Eduard Weber (1804-91), German physicist, made extensive researches in electricity and magnetism from 1833. The gauss is the unit of magnetic flux-density, the ratio of the magnetic flux in any cross-sectional element of a magnetic circuit to the area of that element. The gauss = 1 maxwell per square centimeter.

1930 Gilbert:—William Gilbert (1540-1603), English physician to Queen Elizabeth (also known as Gilberd) who, in 1600, set forth theories on electricity and magnetism, and demonstrated by electrical machines. The gilbert is the unit of magneto-motive force, which produces the magnetic flux. The term "ampere-turn" had been used as a practical unit.

1930 Oersted:—Hans Christian Oersted (1777-1851), Danish physicist, who discovered electro-magnetism about 1820. The oersted is the unit of reluctance, the obstruction to magnetic flow. One gilbert of magneto-motive force acting on a magnetic circuit of one oersted reluctance produces one maxwell of magnetic flux.

Weights and Measures Conference Organized

In 1875, the International Conference on Weights and Measures was organized in Paris; and, on a site near Paris which



James Watt

was set aside as neutral territory, the International Bureau of Weights and Measures was established. An International Committee was set up to look after the affairs of the Bureau, also the conference every six years. Many nations co-operate in this enterprise with their repre-

sentatives serving on many subcommittees.

The International Standards Association is a co-operative organization of various nations with headquarters in Basle, Switzerland. Each nation has its own National Standards Association and a National Bureau of Standards. In Canada, the National Research Council at Ottawa serves for Canadian Standards. The Canadian Standards Association is the clearing house for most technical activities in Canada, relating to standard practices.

In 1906 the International Electrotechnical Commission was organized to permit the technical societies of the world to consider and set up standards of electrical apparatus of many kinds. Meetings are held every four years. The work of the Commission is carried on mainly by advisory committees on many subjects, who publish reports on their work for the benefit of all concerned.

In Canada and United States are a great many scientific and technical organizations, trade associations, and other agencies. The Standards Year Book, published in New York, gives a vast amount of information regarding the work of many organizations.

In 1897, the National Electrical Code was originally prepared, containing rules and regulations for electric wiring and electric apparatus, to provide safety for all people and to prevent losses by fire and accident. This was the result of the organizing in 1895 of the National Fire Protection Association. The National Board of Fire Underwriters has been in operation since 1866. The Underwriters Laboratories were established to test, set standards, and give approvals for a great variety of materials and equipment. Inspection and advisory service have been carried on through the years.

National Safety Code Issued

In 1914 the National Safety Code was first issued to provide rules for safety of the public, employees, equipment, and premises.

In 1929 the Lightning Protection Code was prepared to safeguard life and property.

The men and women, who take a deep interest in their professional societies by attending meetings and conventions and by studying the printed matter in monthly journals and yearly volumes, make it a labour of love for their profession, giving liberally of their time, effort, and money. There is a wonderful bond of friendship among professional people, locally and internationally. Many of them take long trips, and spend considerable time away from home and business.

#his and #hat

By The Editor

Human Nature doesn't seem to change very much. Once again we have to reach this conclusion after having taken an opinion poll on the question: "What does Christmas mean to you?"

An overwhelming majority of the people we questioned feel that Christmas is a time for the kiddies and that it wouldn't be Christmas without Santa Claus. Many others said that Christmas was important to them because it presented an opportunity for all members of the family to gather together and that it was a time of the year when people acted one to another as human beings should act throughout the year.

We also talked to people to whom the joy of the Christmas season was dimmed by memories of happier Christmases. And then, we met the modern Scrooge who regarded this season as just a time to estimate the increase or decrease in material wealth. There were a few who scoffingly remarked "Humbug," when you asked what Christmas meant to them.

While children, gifts, cards, parties, dinners and trees were uppermost in the thoughts of most folk, there were only a few who were unmindful of the fundamental and enduring significance of the first Christmas.

We have our own thoughts on Christmas, and we have heard many addresses and read many articles about the Christmas spirit and how at this particular season people's hearts become defrosted. It seems, however, that we—presumably intelligent people—have not yet managed to banish greed, selfishness, fear, envy and hate from our midst. The efforts of the U.N. to establish permanent peace throughout the world are at times very discouraging.

Somehow, we cannot help but feel that there would be new and greater hope

for the peace of the world if we were to learn that Messrs. Bevin, Byrnes and Molotov had decided to hang up their stockings side by side this Christmas Eve and if Tiny Tim could be present at their Christmas dinner to say: "God Bless Us Everyone."

* * *

Just the other day we asked one of our colleagues what he would be doing this Hogmanay, and we wish we could express in words the look of blank bewilderment on his face. When we explained what we meant by Hogmanay, he said: "Why don't you write that?" Well, we're going to take him up on the suggestion for it's possible that others may be interested in the significance of Hogmanay.

Space will not permit going into the Scandinavian origin of this occasion which was a religious feast in the early days. Briefly, Hogmanay is the name given to the last day of the year in Scotland. That night—New Year's Eve—just after the bells have pealed in the New Year, Scottish folk set out to first-foot their friends. There are a number of superstitions associated with this traditional observance. For instance, the first-foot, who is the first person to cross the threshold of a home after midnight, should be a dark man with a high instep. For some reason fair-haired folk (of either sex) and people with low insteps are regarded as very unlucky first-foots. It is claimed that a first-foot, who has the necessary qualifications, can bring a home and the people of that home good luck during the year. The first-foot must leave a gift in the home he visits and he is expected to kiss all the ladies present—(this will probably stimulate interest in this Scottish observance)—and then break bread and drink ginger wine, or anything else, if it happens to be available.

Ginger wine, of course, is preferred with a dash of ginger ale to give it an added kick.

The first-foot who fails to bring a gift—and leave it—would be inviting poverty to that home during the year. If the first-foot were to cross the threshold unshod (barefooted)—and that's unlikely in Canada—it would be an omen of death. It may be of interest to some readers to learn that a piece of coal is regarded as a lucky gift to leave in a home. No doubt, some Scots may be agitated about the present coal situation! Another lucky gift is a red herring. In some parts of Scotland, the red herring is dressed up in ribbon and sold on the streets by vendors on New Year's Eve. Needless to say, first-footers buy them up very quickly.

Many folk will recall scenes they have witnessed in Scotland on Hogmanay night—just before midnight—when the people gather round the Town Hall waiting for the witching hour to strike. Bagpipe music—and we insist it is music—melodians, mouth organs and fire-crackers help provide a really rousing setting. About a minute to midnight there is a sudden hush—then the deep warning notes of the hour boom out. As the last note of the midnight hour dies away, pandemonium breaks loose and it seems as if everybody were kissing and shouting "Happy New Year." The crowd gradually breaks up and the first-footers make their rounds. A first-footer may have to visit several homes before he, finally, comes to the place where he joins in a party for the night. Most of these parties break up about 7 in the morning. And so, there you have it, that's Hogmanay.

As we close this, the last column of 1946, we repeat the old, familiar greeting: "Merry Christmas and a Happy New Year."

Lighter Lines

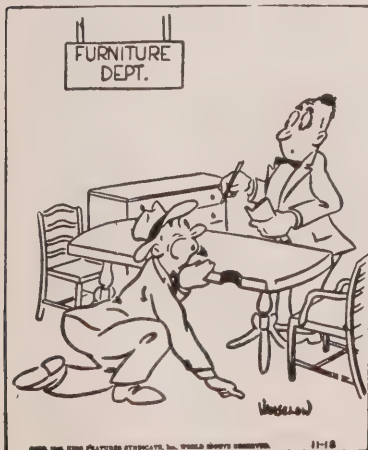


"Wrap it as a gift!"

Money may talk but have you noticed how hard of hearing it is when you call it?

He reminds me of the man who murdered both his parents and then, when sentence was about to be pronounced, pleaded for mercy on the grounds that he was an orphan.—Lincoln.

"No, no, no," protested the agreeable fellow, "I wouldn't call her a sourpuss at all. All I said was that when she rubs cold cream on her face, it curdles."



"Hmm! It IS walnut!"

A little girl looked up at her mother and said: "Mother! How can I button my dress when the buttons are in the back and I'm in the front?"

Woman begins by resisting man's advances and ends by blocking his retreat.

A highbrow is a man educated beyond his intelligence—Brander Matthews.

A man's death was mistakenly noted in the obituary column of a local paper and he rushed to the editor in high dudgeon. "I'm awfully sorry," said the editor, "and the worst of it is, it's too late to do much about it. The best thing I can do for you is to put you in the Birth Column tomorrow morning and give you a fresh start."

During the past year, we hope this column has contributed in some measure to the happiness of our readers, for life without a sense of humour would be very dull. The wish we cordially extend to all readers at this happy season is best expressed in these words of Charles Dickens:

"I have always thought of Christmas time as a good time; a kind, forgiving, generous, pleasant time; a time when men and women seem by one consent to open their hearts freely; and so I say 'God Bless Christmas'."

"The girl I marry must have a sense of humour", said the college boy. "Don't worry", replied his father, "she will!"

As the young man and his girl left the movie theatre after a performance, the young woman said: "It's marvellous what progress the films have made in just the last few years."

"Yes," her escort agreed, "first they moved, then they talked and now this one smells."

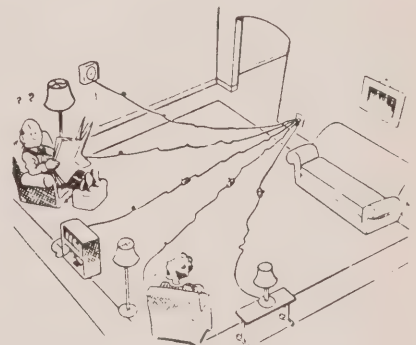
Life is like playing a violin solo in public and learning the instrument as one goes on.—Bulwer Lytton.



"Have I made any comments on the way you're dressed?"

I want a film that begins with an earthquake and works up to a climax.—Samuel Goldwyn.

An American army junior had a quiz in science. The question was: "Define a bolt and a nut and explain the difference, if any." The boy wrote: "A bolt is a thing like a stick of hard metal such as iron with a square bunch on one end and a lot of scratching wound around the other end. A nut is similar to a bolt only just the opposite, being a hole in a little chunk of iron sawed off short with wrinkles around the inside of the hole."



"No matter how I arrange the furniture, I still feel there's something wrong!"



CHAPTER IX

EARLY ELECTRIC LIGHTING

By Mildred C. Redmond,
Hydro News

The light destined to put to rout the old bogey of darkness once and for all was the electric bulb. Deceptively simple in construction, amounting to nothing more than a glass bulb with a twist of wire filament inside, it can be placed among the most wonderful inventions in the world. Within this small bulb lies a whole world of research and experiment, mechanical ingenuity and financial adventure.

In this the closing article of this series, we shall begin by discussing lights produced from electricity which were made more than a quarter of a century before Edison was born. As far back as 1808, scientists were discussing the possibilities. Sir Humphrey Davy, in 1810, was the first to form an electric arc in his laboratory and produced a real electric light. Just before he died in 1829 he published the results of his experiments with the arc light. However, nothing was done about it immediately because at that time gas lighting was making big strides. Apart from laboratory experiments it was not until 1876 that the first definite electric light appeared in the form of Jablochhoff's "candle," consisting of two carbons placed side by side. This light was used to light the streets of London, Paris and other European cities. The next year, in America, Cleveland's public square was lit by an arc light perfected by C. F. Brush, and these lights were quickly adopted by various other cities in United States and Canada.

During the middle century there were a number of arc lights patented; they were open to the air, needed constant attention and were anything but satisfactory. Also, they were too powerful to be used for domestic lighting and were useful only for the street or a large public building like a railway station.

Started Other Experiments

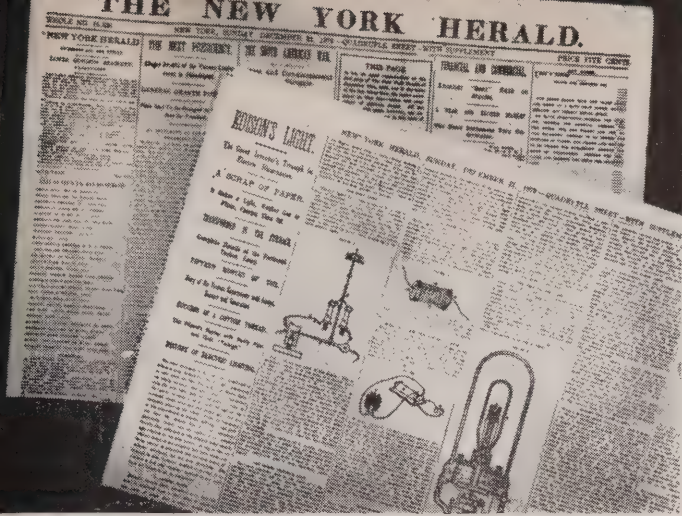
But if the early arc lights were not practical they started other experimenters on the road to find something that was. Two men who reached the goal at approximately the same time, and inde-

pendent of each other, were Joseph Swan in England and Thomas Edison in the United States. It must be remembered that these two men built their work on the research of dozens of other men whose names are not so well known, but each of whom made important contributions to the ultimate result. The experimenters all faced the same problem, to split up the large electrical units employed in arc lighting and produce smaller units for the domestic sphere. Both Swan and Edison found that a hot metal strip could be enclosed in a glass

(Continued on page 28)



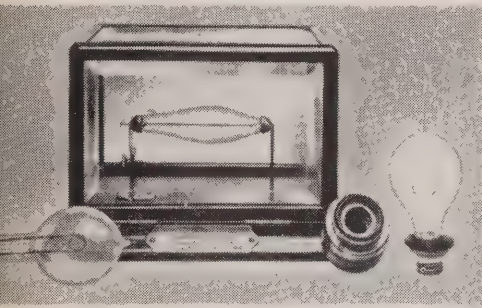
ELECTRIC ARC lights were used for street lighting as early as 1877. This picture shows Toronto in 1888 with the arc light at the corner of Front and Yonge Streets.



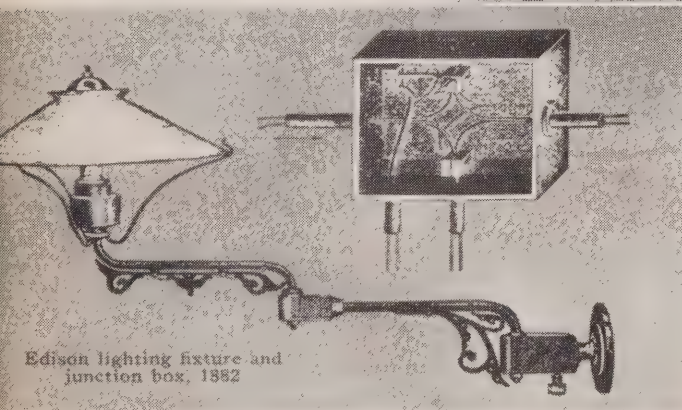
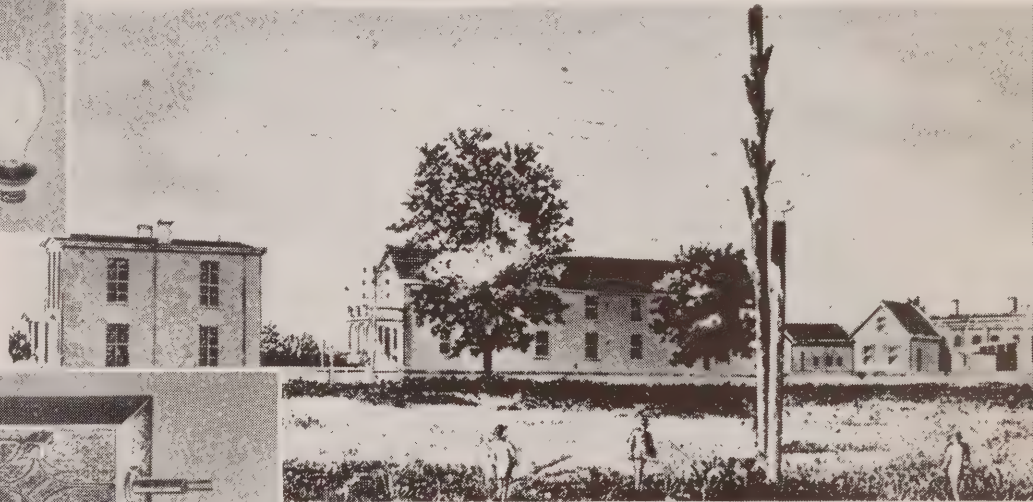
SUNDAY SUPPLEMENT of the New York Herald, 1879, gives the latest report on the wonderful new invention of the carbon electric lamp.



ABOVE: THE first incandescent lamp factory in America. Edison had the equipment in this old house and had the first lamps turned out. Below: Menlo Park, N.J., Edison's home, was the scene of the first exhibition of incandescent electric lighting in America. Special trains were run from New York to carry the curious public.



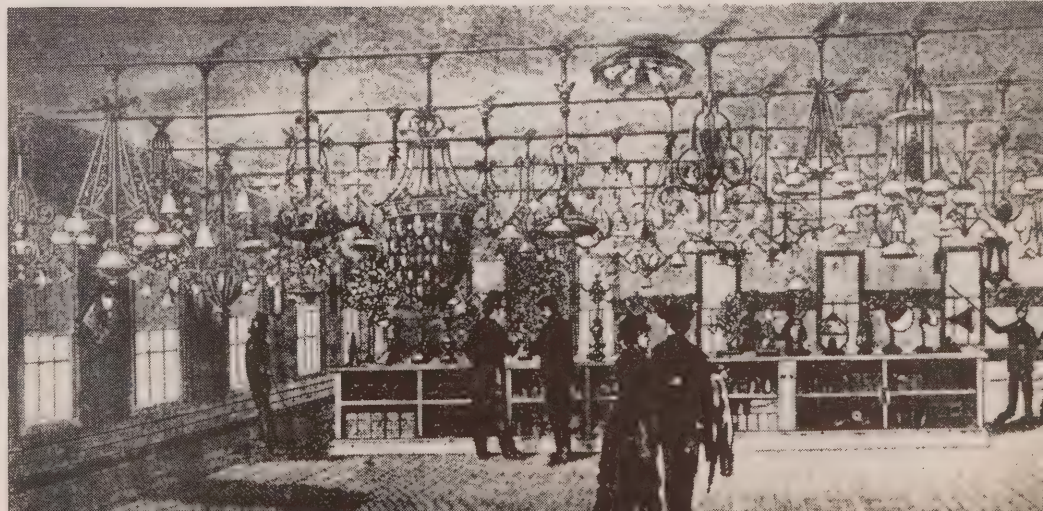
IN THE centre is the first incandescent electric lamp made about 1877 by Sir Joseph Swan. Left, is the first Swan commercial lamp and right the earliest Edison lamp.



Edison lighting fixture and junction box, 1882

LEFT: ONE of the earliest lighting fixtures in the first days of the Edison carbon lamp. Beside it is a junction box. Below: prospective customers make their choice from the newest thing in lighting fixtures. It is a show window at the end of the last century when electric lighting was still a novelty.

BELOW: NOVELTY lamp made in the shape of Queen Victoria to celebrate the Diamond Jubilee. It has a carbon filament.



WHEN DAY IS DONE

(Continued from page 26)

bulb from which the air had been exhausted. But the real difficulty was to find a filament which would stand up without melting or short circuiting.

Edison set to work and tried many different materials, among them platinum and metal alloys of different kinds, but he couldn't find anything with a sufficiently high melting point. Finally, he tried a filament of cotton thread that had been thoroughly carbonized and this thread burned for forty hours. Edison, himself, has described the excitement of those who witnessed this experiment. "We sat and looked," he wrote, "as the lamp continued to burn. The longer it burned the more fascinated we were. None of us could go to bed and there was no sleep for forty hours. We sat and just watched it with anxiety and growing elation." He knew then that he was on the right track and he started experimenting with all sorts of materials.

The best results he got from a small piece of carbonized bamboo and this started him off on a study of bamboo wood. As an example of Edison's inexhaustible patience and energy in his work, he discovered that there were 1,200 varieties of bamboo and immediately he sent off searchers all over the world to find samples. He, himself, tried 6,000 specimens and spent \$100,000 in finding the right wood. At last he found a type that he considered satisfactory and prepared to put his electric bulb on the market. A few months later, in December, 1879, he put on a gala demonstration of electrical lighting at his home at Menlo Park. It drew such a crowd that the Pennsylvania railroad had to run special trains. Six months later the first incandescent lighting system was installed on the good ship Columbia ready to sail for San Francisco via Cape Horn. Three years later electric lights used in offices and on the streets of New York attracted attention all over the world.

In the meantime, parallel progress was

being made in England. Swan, experimenting with filaments, used threads of cotton soaked in acid and then baked. In 1878 he exhibited a lamp in Newcastle in the form of a cucumber with a carbon filament in a vacuum. During the following years, other experimenters made various improvements to these original incandescent lamps. In 1903, von Welsbach, the inventor of the gas mantle, produced an electric bulb with a filament of the metal osmium. The discovery that metal could be used for this purpose resulted in a revolutionary change in lamp production. Later tantalum was used and eventually a lamp having tungsten filament was produced giving, roughly, four times the light of a carbon filament for the same consumption of current. The first lamps made with tungsten filaments were Mazda lamps and were produced in 1911.

After the discovery of tungsten, the greatest improvement was the introduction of the "gas filled" bulb in place of the vacuum lamp. The rare gas of the



IN 1915 home life looked like this, complete with the latest thing in electric lighting, a brass fixture, unframed bulbs and decorated glass shades with scalloped edges.

atmosphere, argon, was used to fill them and resulted in an increase in brilliance and reduction in current.

While scientists were improving the electric light, most of the civilized world was rapidly adopting it to lighten its dark homes and offices, its public buildings and its streets. As with all improvements, the change-over was not made without certain difficulties and controversies. For example, in England, the Edison-Swan Electric Company was up on trial to uphold its patent rights when the lamps were first being used. The High Court Judge ruled that the company must prove its ability to produce the lamps they claimed they could make. Whereupon the whole court, judge and jury, tramped over to the first electric lamp factory and watched the bulbs being made.

Canada Not Far Behind

Canada was not far behind the United States and England in adopting the new form of lighting. By 1884 there was interest enough in Toronto that the Canadian Electric Light and Manufacturing Company and the Toronto Electric Light Company were asked to submit tenders for the erection of fifty lamps of 2,000 candle-power each. After much discussion and delay the contract went to the Toronto Company at 62 cents per light per night. As an added touch, two arc lights were installed in the Council Chamber, but not with extraordinary success. On November 17, Alderman Moore gave notice of motion to the effect that, "As the two electric lights in the Council Chamber are a nuisance, they be removed forthwith." The same alderman again proved that he was not an arc light enthusiast, for shortly after he also moved that steps be taken to terminate the use of electric lights altogether in the city and to secure the removal of the poles and wires from the streets. However, in spite of the alderman's disapproval electric lighting in the city went forward, and by 1888 the main streets were lighted by arc lights as shown by the accompanying picture, taken at the corner of Yonge and Front streets. For the next twenty years gas lighting fought a losing battle and by 1911, the last gas light disappeared from the streets of Toronto and the whole city was lighted by electric lamps.

Lighting Habits Revolutionized

The revolution that electricity made in the lighting habits of the civilized world was sudden and complete. When we

HYDRO MAN IS CITED FOR PROMPT ACTION



Thanks to quick thinking three people were saved from asphyxiation by W. J. Stanner of The Hydro-Electric Power Commission of Ontario. Mr. Stanner, mechanic at the Bridgman transformer station, took an S.O.S phone call last November 11 from the home of John King, a colleague. Mr. King being out on a job at the time, Mr. Stanner went at once to the King home where he found three members of the family overcome by coal gas fumes. Mrs. King had managed to make the phone call before she collapsed on the stairway. Arriving on the scene, Mr. Stanner threw the doors and windows open and went at once upstairs where he heard someone moaning. He found the daughter Irene and carried her downstairs to the fresh air. Mrs. King was recovered enough to tell him that her 80-year-old mother-in-law was also upstairs and he went back to find her, opened the window and pushed her bed over beside it. He then phoned the fire department for inhalators. The three were taken to hospital where, after treatment, they were able to return home. Investigation showed that a faulty furnace pipe was the cause of the gas escaping into the house.

Singled Out For Special Mention

Mr. Stanner's prompt action was singled out for special mention in a local radio programme whose sponsor presented him an award for "courage and unselfishness above and beyond the call of ordinary citizenship."

remember that just one hundred years ago men still had to carry lanterns in the streets of London when they went abroad at night, we realize how very recent it is that man has come into the light out of the darkness of all the previous centuries.

AT THE ROYAL

(Continued from page 4)

vestibule to the Royal Horse Show, the flower court was a mass of blooms, including approximately 6,000 roses, and many chrysanthemums and other flowers of all varieties.

Entries Over Pre-War Years

This year marked the eighteenth Winter Fair since the first in 1922, when a Royal Charter was granted by the late King George V for the use of the term "Royal." During the war years the Fair was discontinued as the buildings were taken over by the armed forces. The increasing popularity of the "Royal" is indicated by the fact that in general, entries were well over pre-war years.

Among the distinguished visitors who attended were: His Excellency, Viscount Alexander, Governor-General of Canada, and Viscountess Alexander; Hon. Albert Matthews, Lieutenant-Governor of Ontario, and Mrs. Matthews; and the Hon. Ray Atherton, American ambassador to Canada, who officially opened the Fair.

SANTA COMES TO TOWN

(Continued from page 10)

Peter Peter Pumpkin Eater but it was the Queen of Hearts who really captured the romantic story-book mood as she waved in response to eager greetings from the excited children.

So that the more adventurous little boys would not be disappointed, The Lone Ranger and "Silver" were included this year. Superman, of comic fame, was probably working on current Hydro affairs for he was not to be seen in the parade.

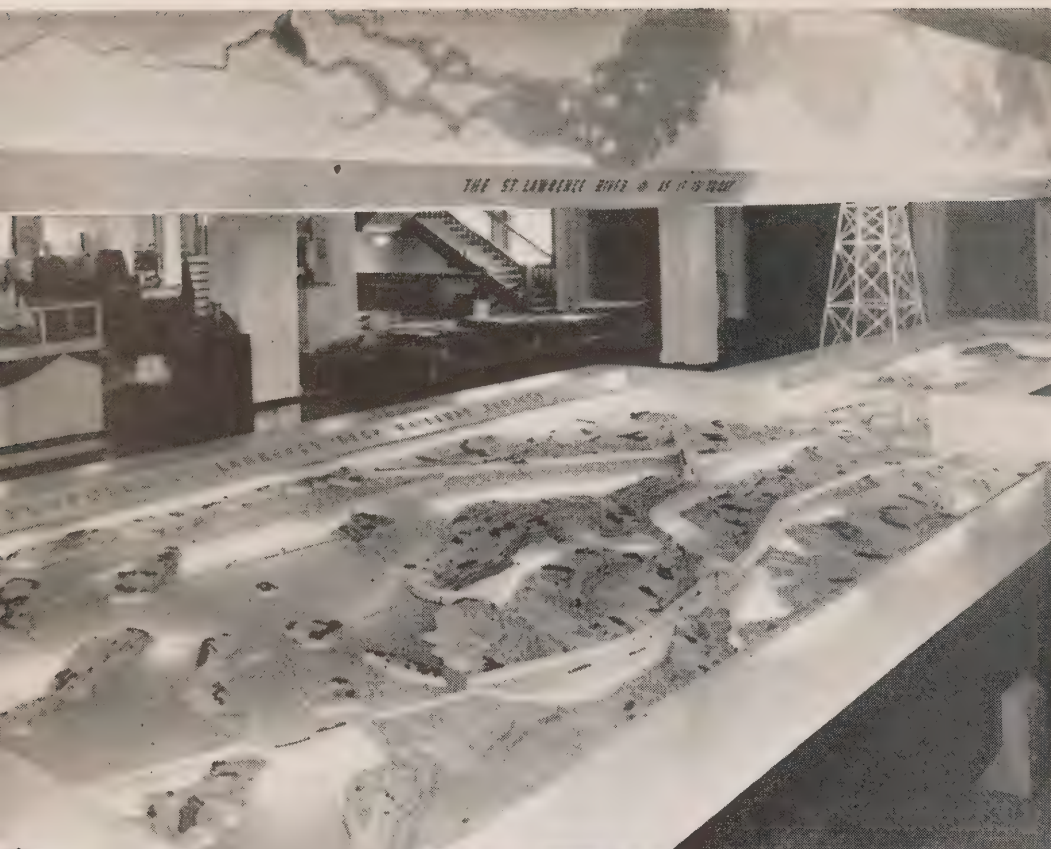
Worked Up To Climax

It was but fitting that the many charming and whimsical characters should step out of their respective story books for a day to pay their respects at the court of Old Santa. Some whirled and danced and others waved and blew kisses to the massed ranks of their excited admirers, while the spontaneous antics of clowns aroused gales of laughter as the parade swung along on its colourful way.

With "jingle-bells," clowns and walking Christmas trees, the parade worked up to the climax when Jolly Old St. Nicholas himself hove into sight.

Acclaimed by a tumultuous roar of delight, the eight reindeer danced along before the traditional festively decorated sleigh.

"It's him! There he is!" the cry went up from the street. And inside the Hydro building many little noses were pressed against windows and young eyes shining with feverish expectation, strained to catch the first glimpse of "Santa," who had come to town for another Christmas.



HERE ARE two different views of the 47-foot scale model of the St. Lawrence waterway project. Left, looking down on the scale model from above, and below, topographical maps on the walls behind the model. The complete model was designed and constructed by Canadian craftsmen in consultation with government engineers and months of careful study contributed towards making it accurate in every detail. It was shown in Washington where it was inspected by members of the United States Senate and Congress and since then has been shown at various points all across Canada where it has created wide interest.

—Pictures courtesy of The T. Eaton Co. Ltd.

ATLANTIC GATEWAY

A scale model of the proposed St. Lawrence deep waterway project, commissioned by The T. Eaton Co. Ltd., has been on exhibition in various parts of Canada and in the United States.

This project is a co-operative plan between Canada and the United States to deal with the vast shipping and power problem. By deepening river beds, constructing canals and by instituting a new system of locks, large ocean-going vessels would be able to travel from the Atlantic ocean to the head of the Great Lakes. Cities like Kingston, Toronto, Chicago, Duluth, Port Arthur and Fort William would become ocean ports, and there would be a great highway of commerce leading straight into the middle western regions of this continent.

The new development would also provide an important new



source of electric power. By a system of huge dams between Prescott and Montreal and parallel to the International rapids, a drop of 92 feet would be effected in a distance of 47 miles. New dams, built to control the flow of water, would provide a new 2,200,000 horsepower. In Lake St. Francis channels would be deepened, the new Beauharnois Power Canal

would be utilized fully, the level of Lake St. Louis would be raised and three new locks built to bypass the Lachine rapids.

Not since the first transcontinental railway was completed has such a tremendous transportation scheme been conceived nor one more likely to benefit the whole country.

Hydro at Work

CANCELLING MACHINE



From this electric cancelling machine capable of looking after 33,000 letters or postcards an hour, it is a far cry to the old fashioned method of the stamp pad and mallet-like canceller. The latter method was an arm-breaking job, taking three days' work to cover the same amount of mail.

This electric machine is one of ten in regular use at Postal Terminal "A", Bay and Front Streets, Toronto. In addition to cancelling the stamp, it imprints on each letter and postcard passing through the rollers, the name of the post office and the date and hour on which it passes through the machine.

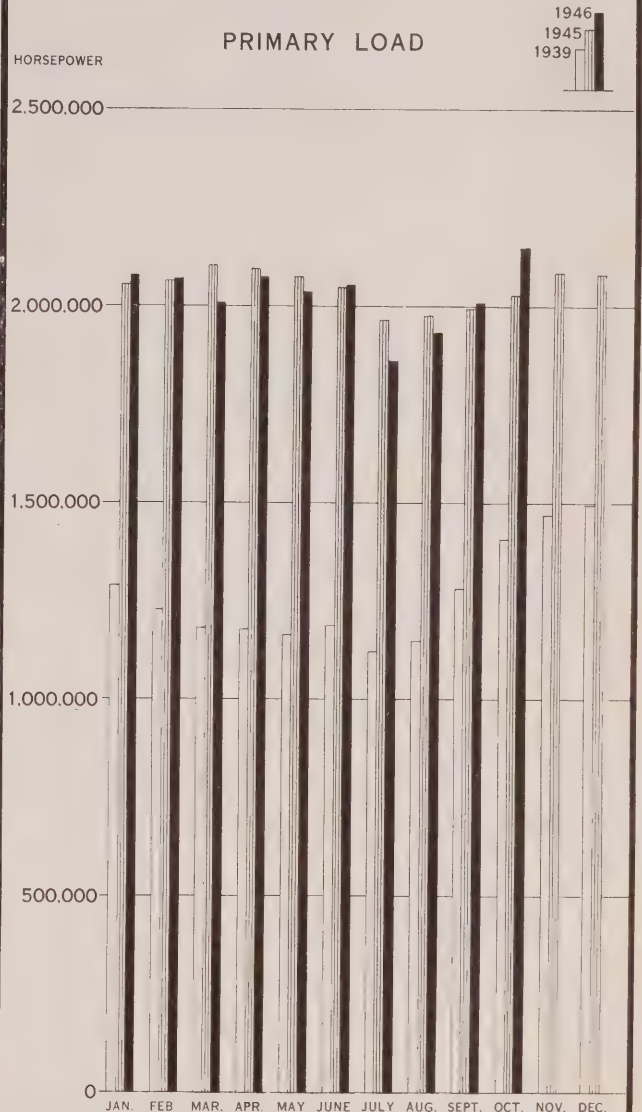
As can be seen from the picture, the belt-driven machine itself is on a table-like structure under which there is a concealed half-horsepower motor.

To facilitate handling, and to enable the operator to run these machines at capacity, the letters and cards are "faced up" and stacked in long chutes. Large and bulky letters are removed in this operation and put through a special electric machine designed for just this purpose.

During the peak load at Christmas time, six extra machines are added to this battery and thousands of extra people are added to the sorting and delivering end of this important business. V. R. Perry, an official of the post office, estimates that some twenty-five to thirty million letters and greeting cards will go through the Hydro-powered cancelling machines this holiday season.

SOUTHERN ONTARIO SYSTEM

EMBRACING NIAGARA, GEORGIAN BAY AND EASTERN ONTARIO DIVISIONS



PRIMARY LOADS

AREA SERVED BY	MAXIMUM 20-MINUTE PEAK H.P.		PER CENT INCREASE
	OCTOBER, 1946	OCTOBER, 1945	
SOUTHERN ONTARIO SYSTEM	2,146,572	2,027,361	+ 5.9
THUNDER BAY SYSTEM	141,421	124,397	+ 13.7
NORTHERN ONTARIO PROPERTIES	226,687	212,673	+ 6.6
TOTAL	2,514,680	2,364,431	+ 6.4

PRIMARY AND SECONDARY LOADS

SOUTHERN ONTARIO SYSTEM	2,156,599	2,177,763	- 1.0
THUNDER BAY SYSTEM	151,072	136,863	+ 10.4
NORTHERN ONTARIO PROPERTIES	287,464	285,247	+ 0.8
TOTAL	2,595,135	2,599,873	- 0.2

MUNICIPAL LOADS, SEPTEMBER, 1946

SOUTHERN ONTARIO SYSTEM

NIAGARA DIVISION (25-Cycle)

	H.P.	Domes- tic Con- sumers
Acton	2,134	544
Agincourt	283	168
Ailsa Craig	208	147
Alvinston	170	205
Amherstburg	1,310	734
Ancaster Twp.	557	394
Arkona	87	117
Aurora	1,938	793
Aylmer	1,183	758
Ayr	341	227
Baden	437	168
Beachville	814	167
Beamsville	643	399
Belle River	324	314
Blenheim	782	560
Blyth	191	184
Bolton	331	172
Bothwell	178	185
Brampton	4,173	1,627
Brantford	23,964	8,337
Brantford Twp.	1,956	1,476
Bridgeport	286	178
Brigden	131	125
Brussels	246	256
Burford	392	235
Burgessville	117	64
Burlington	2,155	1,234
Burlington Beach	660	732
Caledonia	464	452
Campbellville	70	50
Cayuga	214	186
Chatham	8,813	4,575
Chippawa	488	364
Clifford	123	130
Clinton	962	593
Comber	170	120
Cottam	104	131
Courtright	68	91
Dashwood	152	102
Delaware	99	71
Delhi	641	609
Dorchester	138	157
Drayton	186	167
Dresden	669	466
Drumbo	154	90
Dublin	57	61
Dundas	3,194	1,458
Dunnville	1,633	1,063
Dutton	293	234
East York Twp.	11,804	11,918
Elmira	1,847	554
Elora	602	355
Embro	228	125

	H.P.	Domes- tic Con- sumers
Erieau	246	197
Erie Beach	43	79
Essex	847	528
Etobicoke	12,745	6,157
Exeter	1,064	544
Fergus	1,872	770
Fonthill	271	300
Forest	777	510
Forest Hill	8,623	3,567
Galt	13,437	4,296
Georgetown	2,681	833
Glencoe	273	230
Goderich	2,178	1,361
Granton	82	85
Grimsby	1,192	655
Guelph	14,386	5,703
Hagersville	1,317	406
Hamilton	126,865	43,700
Harriston	664	378
Harrow	840	350
Hensall	279	210
Hespeler	3,186	825
Highgate	127	107
Humberstone	599	738
Ingersoll	3,782	1,568
Jarvis	212	163
Kingsville	773	641
Kitchener	24,057	8,718
Lambeth	168	140
LaSalle	408	259
Leamington	3,056	1,688
Listowel	1,835	801
London	46,681	19,859
London Twp.	657	494
Long Branch	1,883	1,564
Lucan	281	186
Lynden	146	105
Markham	524	350
Merlin	111	124
Merritton	9,608	962
Milton	1,869	555
Milverton	564	263
Mimico	3,581	2,306
Mitchell	948	521
Moorefield	116	56
Mount Brydges	140	166
Newbury	53	70
New Hamburg	886	384
Newmarket	2,575	1,022
New Toronto	6,726	2,029
Niagara Falls	12,133	4,984
Niagara-on-the-Lake	1,153	623
North York Twp.	13,091	7,019
Norwich	609	391
Oil Springs	200	104
Otterville	170	143

	H.P.	Domes- tic Con- sumers
Palmerston	733	400
Paris	2,300	1,215
Parkhill	373	315
Petrolia	1,112	825
Plattsville	214	118
Point Edward	1,721	349
Port Colborne	2,285	1,655
Port Credit	1,191	649
Port Dalhousie	1,176	691
Port Dover	880	750
Port Rowan	152	171
Port Stanley	1,281	825
Preston	4,657	1,689
Princeton	215	98
Queenston	188	81
Richmond Hill	749	414
Ridgetown	770	599
Riverside	1,699	1,559
Rockwood	205	174
Rodney	199	239
St. Catharines	29,442	8,742
St. Clair Beach	144	102
St. George	235	154
St. Jacobs	404	141
St. Marys	2,358	1,076
St. Thomas	9,351	4,718
Sarnia	7,941	5,403
Scarborough Twp.	6,985	5,950
Seaforth	1,280	524
Smithville	391	185
Simcoe	3,271	1,678
Springfield	102	133
Stamford Twp.	4,005	2,497
Stoney Creek	309	289
Stouffville	644	408
Stratford	10,012	4,561
Strathroy	1,980	876
Streetsville	321	208
Sutton	516	468
Swansea	3,234	2,096
Tavistock	860	300
Tecumseh	703	711
Thamesford	356	147
Thamesville	296	243
Thedford	162	166
Thorndale	153	83
Thorold	3,508	1,274
Tilbury	1,028	502
Tillsonburg	2,028	1,243
Toronto	387,025	154,302
Toronto Twp.	5,247	3,065
Wallaceburg	4,444	1,387
Wardsville	70	65
Waterdown	346	280
Waterford	526	397
Waterloo	7,935	2,306
Watford	513	312

MUNICIPAL LOADS, SEPTEMBER, 1946

	H.P.	Domes- tic Con- sumers
Welland	11,798	3,264
Wellesley	192	137
West Lorne	545	227
Weston	5,663	1,700
Wheatley	303	237
Windsor	51,721	26,909
Woodbridge	994	314
Woodstock	9,177	3,448
Wyoming	112	166
York Twp.	25,197	21,946
Zurich	193	149

(66 2/3-Cycle)

Bronte	248	244
Oakville	1,827	1,285
Trafalgar Twp.	843	573

GEORGIAN BAY DIVISION

(60-Cycle)

Alliston	626	447
Arthur	269	199
Bala	405	336
Barrie	5,753	2,471
Beaverton	441	331
Beeton	146	148
Bradford	453	291
Brechin	74	53
Cannington	343	262
Chatsworth	124	108
Chesley	846	456
Coldwater	228	159
Collingwood	3,189	1,650
Cookstown	141	119
Creemore	256	176
Dundalk	272	210
Durham	581	464
Elmvale	220	191
Elmwood	109	72
Flesherton	115	126
Grand Valley	226	184
Gravenhurst	1,562	593
Hanover	1,836	850
Holstein	23	63
Huntsville	1,478	744
Kincardine	1,026	741
Kirkfield	26	37
Lucknow	569	287
MacTier	129	128
Markdale	266	231
Meaford	1,042	757
Midland	4,284	1,625
Mildmay	201	184
Mount Forest	753	502

	H.P.	Domes- tic Con- sumers
Neustadt	48	110
Orangeville	1,094	746
Owen Sound	8,627	3,663
Paisley	221	202
Penetanguishene	1,413	773
Port Carling	378	211
Port Elgin	734	509
Port McNicoll	123	241
Port Perry	475	381
Priceville	15	38
Ripley	157	129
Rosseau	55	58
Shelburne	448	314
Southampton	715	567
Stayner	424	341
Sunderland	138	140
Tara	192	164
Teeswater	222	233
Thornton	53	67
Tottenham	145	161
Uxbridge	576	423
Victoria Harbour	96	271
Walkerton	1,385	687
Waubaushe	213	235
Warton	527	437
Windermere	109	64
Wingham	1,152	560
Woodville	112	116

EASTERN ONTARIO DIVISION

(60-Cycle)

Alexandria	385	415
Apple Hill	62	66
Arnprior	1,659	891
Athens	190	183
Bath	70	64
Belleville	9,499	3,939
Bloomfield	197	181
Bowmanville	2,000	1,234
Brighton	708	563
Brockville	8,069	3,101
Cardinal	530	394
Carleton Place	2,326	1,076
Chesterville	450	248
Cobden	180	160
Cobourg	2,954	1,443
Colborne	314	285
Deseronto	361	395
Finch	159	107
Frankford	250	262
Hastings	169	238
Havelock	216	295

	H.P.	Domes- tic Con- sumers
Iroquois	391	279
Kemptville	524	393
Kingston	20,211	7,867
Lakefield	521	360
Lanark	128	173
Lancaster	61	116
Lindsay	4,212	2,289
Madoc	282	318
Marmora	129	249
Martintown	75	56
Maxville	147	176
Millbrook	159	182
Morrisburg	523	444

Napanee	2,007	897
Newcastle	290	230
Norwood	262	242
Omeme	248	173
Orono	131	183
Oshawa	19,894	5,765
Ottawa	41,315	15,658
Perth	2,402	1,110
Peterborough	21,770	6,702
Picton	1,992	1,336
Port Hope	3,317	1,455
Prescott	1,711	815
Richmond	133	85
Russell	122	119
Smiths Falls	4,134	2,012
Stirling	460	293
Trenton	6,474	1,833
Tweed	404	321
Warkworth	99	135
Wellington	519	343
Westport	154	149
Whitby	1,983	1,054
Williamsburg	168	86
Winchester	620	309

THUNDER BAY SYSTEM

(60-Cycle)

Fort William	17,489	7,332
Nipigon Twp.	325	243
Port Arthur	24,595	6,099

NORTHERN ONTARIO PROPERTIES

Nipissing District
(60-Cycle)

North Bay	6,542	3,379
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Patricia District
(60-Cycle)

Sioux Lookout	347	512
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Sudbury District
(60-Cycle)

Capreol	539	344
Sudbury	12,080	8,734



Light has always been a symbol of Christmas: The Star of Bethlehem . . . centuries of flickering candles . . . the light of good will in the eyes of men.

The world's greatest need at this time is a clear and lasting interpretation of the true spirit of Christmas reflected in "good will towards men." Only through wide-spread continuing good will can we hope to re-establish confidence, hope, and human happiness on an enduring basis.

It is the sincere wish of your Hydro Commission that the coming year may bring growing realization of our interdependence, one upon the other; and that, in the age-old spirit of this season, you may find a guiding light to the fulfilment of every worthy desire.

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 Ont Hydro news.
 H vol.32-33 (1945-1946)

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